Cruz Cano's Map of South America, Madrid, 1775: its creation, adversities and rehabilitation

THOMAS R. SMITH, University of Kansas

Late in 1775, Juan de la Cruz Cano y Olmedilla, with the active assistance of Hipólito Ricarte, completed his large and noteworthy map of South America. Twenty years earlier John Mitchell's *Map of the British Colonies in North America* had appeared in London. Although there is no known relationship between these two efforts, they have many similarities. Both were large, detailed, beautifully engraved on copper, and based on careful compilation and discriminating use of source materials. Each one, the best map of its area, was published in several editions and was not to be displaced for decades. They both were widely used and featured in diplomatic negotiations for a century or more after their initial appearances. Both have received more than passing attention from scholars, but neither has been the subject of a deservedly detailed and published study.[1]

Cruz Cano's *América Meridional*[2] is indeed a monumental map. On eight large sheets it measures about 6 x 8 feet when mounted. No small reproduction can begin to do it justice. But figure 1 provides a general impression of the abundant detail resulting from careful engraving at the scale of about 1 : 4,000,000 as well as the elaborate title and decorations, with inset maps, legend, and notes which embellish the map itself. In general outline it compares favorably with the five-million map of South America produced by the American Geographical Society over 150 years later. Superposition of the continental outlines and major rivers of the two maps (fig. 2) shows them to be quite close and reveals the 18th century representation of South America to be much better than the contemporary representations of the continent to the north.

From this it is clear the Cruz Cano map deserved a much better fate than befell it. In spite of the fact that it was an official project, initiated and paid for by the Spanish government, it appears to have been withheld from public distribution for a quarter-century following the first printing in 1775. Consequently, it was and is seldom on the market. Thomas Jefferson[3] and Alexander von Humboldt[4] were both authorities for the statement that the plates had been destroyed. In the years immediately following its appearance and on several occasions during the next century the merits of Cruz Cano's map were debated, sometimes heatedly,

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[1] A brief listing of the editions of the Mitchell map is found in the essay by Henry Stevens and Roland Tree, "Comparative Cartography..." in *Essays Honoring Lawrence C. Wroth* (Portland, 1951), p. 342-343. A more extended treatment in David Hunter Miller (ed), *Treaties and Other International Acts of the United States of America* (Washington, 1933), Vol. III, p. 328-351, is based largely on a manuscript by the late Dr. Lawrence Martin who devoted much study to the Mitchell map. Unfortunately, Dr. Martin's unpublished manuscript was not found after his death.

[2] The full title, which occupies most of sheet No. 8, reads:
Mapa geográfico / de / América Meridional, / dispuesto y gravado / por D. Juan de la Cruz Cano y Olmedilla. geogfo pensdo de S. M. / individuo de la Rl Academia de Sn Fernando, y de la Sociedad Bascongada de los Amigos del Pais; / teniendo presentes varios Mapas y noticias originales / con arreglo á Observaciones astronómicas, / Año de 1775.
Ricarte's collaboration is acknowledged in an imprint below one of the decorative figures in the title frame: *La letra por Ricarte.* Another imprint, below the border of sheet No. 1, identifies Ricarte as the printer as well as the engraver of the lettering:
Hoja 1a de la América Meridional, Construìda Gravada, è Illustrada por Dn Juan de la Cruz Geografo Pensionado por S. M. y Académico de Merito en la Rl de Sn Fernando; Impresa y Gravada la Letra por Hipolito Ricarte año 1771.
Sheet No. 1 was engraved in 1771 but there is no indication that any examples were printed before the engraving of all eight sheets was completed in 1775, which is therefore taken as the date of the map's first appearance.

[3] J. P. Boyd (ed.), *The Papers of Thomas Jefferson*, Vol. X (Princeton, 1954), p. 212.

[4] Alexander von Humboldt, *Personal Narrative...*, (London, 1821), Vol. 5, p. 495. (Translation from the French by Helen Maria Williams.) Humboldt repeats the statement in a manuscript note on the face of the Cruz Cano map once in his possession, now at the American Geographical Society of New York.

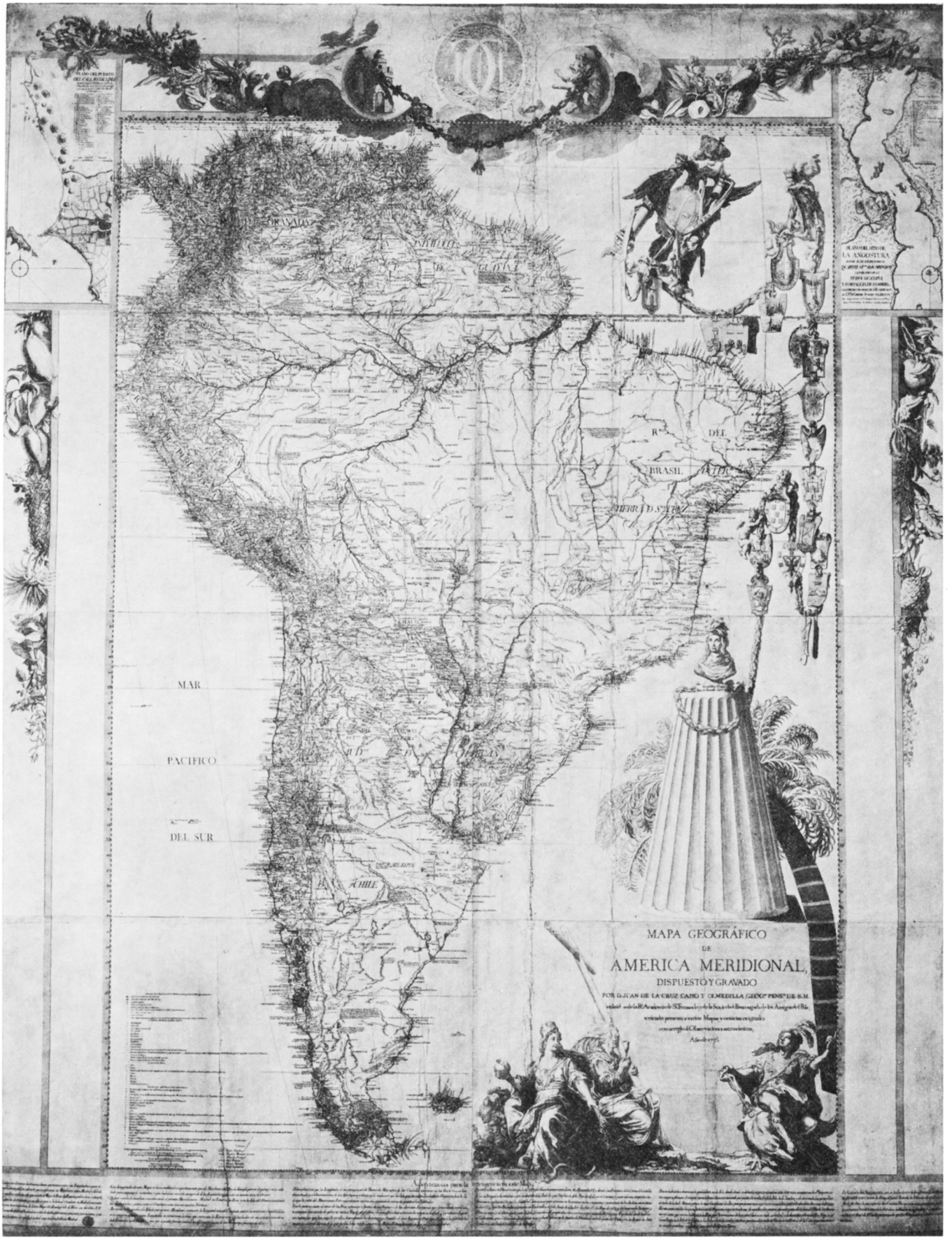

Fig. 1. CRUZ CANO'S MAP OF SOUTH AMERICA, MUCH REDUCED FROM THE EXAMPLE AT THE BRITISH MUSEUM. NOTE THAT MAR ATLANTICO DEL NORTE IS LACKING ON SHEET 2 ALTHOUGH THE PACIFIC OCEAN IS NAMED ON SHEET 5. SHEET 2 IS THEREFORE IN SECOND STATE AND THE MAP IS A VARIANT THIRD EDITION (SEE TABLE 3, MAP 21).

within the Spanish government,[5] in scholarly publications in Spain[6] and Germany,[7] and by diplomats in boundary negotiations,[8] an interesting development in view of the initial reluctance to publicize it. In 1799 William Faden produced his well-known re-engraving in London and both this and the original were listed in dealers' catalogs.[9] Early in the present century the documents and commentaries published by Duro in his history of the Spanish navy were used for a brief but sympathetic discussion of Cruz in Marcel's biography of Tomas López.[10] More recently a more substantive contribution has been made by Dr. Walter Ristow who has investigated the source-map for Faden's re-engraving,[11] a point to which we shall return in this paper. Finally, Cruz Cano's map has been reproduced with descriptive annotations, in three works on the history of cartography.[12] Despite this considerable attention, there has been little detailed study of the map itself. No recognition has been found of the many changes on the plates and the fact that the map was printed in several editions. Also, little attention has been paid to the map's subsequent reception, use, and history.

The present study, in an effort to fill some of these lacunae, proceeds on the basis of three discrete, but closely related, bodies of source material and methods of investigation. First, a number of contemporary documents dating from 1763 to 1776 are analyzed for the first time and provide much new information concerning the background of the project, the sources for compilation, and the methods and costs of the map's construction. The second major theme is based upon a detailed study of surviving examples of the map, an exercise in analytical cartobibliography, which reveals numerous changes on the plates, some before, but many more after the first printing of record. From this it is possible to identify a series of states for individual sheets, to postulate four eighteenth-century editions for the map as a whole, and to identify 19th and 20th century reprints in addition to the Faden re-engraving. From this it is clear that the map has had a longer and much more complex history of preparation and publication than has heretofore been recognized. Finally, in contemporary documents (1776-1802) and subsequent publications, we are able to review the way in which the map has been received and used. From this there emerges a more definitive explanation of the reasons for the early suppression of the map, and a better understanding of the controversies that have arisen concerning its merits.

Biographical information concerning Cruz Cano is meagre. Little is known of his father other than that he was from Aragon. The names Cano y Olmedilla are from his mother's side of the family. He was born

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[5] Cesareo Fernández Duro. *Armada Española desde la Unión de los Reinos de Castilla y de León*, Vol. 7 (Madrid, 1901), p. 407-414. Duro transcribes documents concerning the map and dated 1775 to 1802 which were in the Archivo General Central de Alcalá de Henares and were selected from a larger collection of documents with the file designation: *Gobernación imprent y agregados, num. 10, 1763-1802.*

[6] *Ibid.*, p. 399-407, where Duro quotes in full a long discourse on the Cruz Cano map by the famous geographer Tomas López, given before the *Academia de la Historia* in Madrid on July 14, 1797. On pages 414-415 he quotes the relevant facts of a discourse by Felipe Bauza, an officer with much experience in boundary survey and demarcation, given before the *Academia* in 1807.

[7] Sprengel in *Allgemeine Geographische Ephemeriden*, Vol. 5, March 1800, p. 271-278; Vol. 6, December 1800, p. 574-578: Zach, in *Monatliche Correspondenz*, Vol. 2, 1800, p. 367-377.

[8] Particularly the Argentinian-Brazilian arbitration of the Misiones dispute under President Cleveland in 1894. Especially: Estanislao S. Zeballos, *Argument for the Argentine Republic upon the question with Brazil in regard to the Territory of Misiones...* (Washington, 1894).

—. *Arbitration on Misiones. Statement made by the Late Minister of Foreign Affairs of the Argentine Republic.* (Buenos Aires, 1893.)

Statement submitted by the United States of Brazil to the President of the United States of America... (New York, 1894).

[9] For example: Bernard Quaritch, London, *General Catalog XII*, 1874, item 9532; *Catalog*, 1880, item 11, 734; *Rough List # 77*, 1886, item 17; *Catalog No. 111*, 1891, item 148: also Henry Stevens, Son & Stiles, London. *Catalog N. S. No. 23*, 1936, item 1027, and *N. S. # 28*, 1938, item 525.

[10] Gabriel Marcel, *Le Géographe Tomas López et son Oeuvre.* In Real Academia de la Historia, Boletín. Vol. 53 (Madrid, 1908), p. 126-243, especially pp. 131-133, 169-170.

[11] Walter W. Ristow, *The Juan de la Cruz Map of South America, 1775.* In Festschrift: Clarence F. Jones, ed. Merle C. Prunty, Jr., Northwestern University Studies in Geography, No. 6 (Evanston, 1962), p. 1-12.

[12] Guillén y Tato, *Monumenta Chartográphica Indiana.* Ministerio de Asientos Exteriores (Madrid, 1942), Text, p. 12-19; Atlas, plates 64-71.

Servicio Geográfico e Histórico del Ejército. *Cartografia de Ultramar*, Carpeta I and Atlas (Madrid, 1949), No. 73.

José Toribio Medina, *Cartografia Hispano-Colonial de Chile*, 2 vols. V(Santiago, 1924), Text. p. 24-26; Atlas, Map 2, sheets 1-8.

in 1734, in Madrid where he lived most of his life and died in 1790. His elder brother was Don Ramón de la Cruz, the famous playwright and satirist. As a young man Cruz was sent to Paris under the patronage of Ferdinand VI to study engraving and map-making. The dates of this sojourn are probably 1752-1760 and he was in company with Tomas López who was to become the leading geographer-cartographer of 17th century Spain. Cruz and López collaborated on a map of North America and a two-sheet map of the Gulf of Mexico, both of which are dated 1755, and they appear to have continued their association later in Madrid. Cruz called himself a geographer and sought appointment as Geographer to the King. From his titles on the map of South America, he appears to have received this designation although this is not certain. His only other known cartographic effort is an excellent map of the Straits of Magellan, which appeared in the history of that voyage by Casimiro Ortego, published in 1769. He did other sorts of engraving, of costumes for example,[13] taught drawing and received a small pension as a member of the Royal Academy of San Fernando to which he was appointed in 1764. However, there is frequent complaint in his letters concerning lack of money and, after his death in 1790, his wife and seven children found themselves in limited circumstances. Within the family he must have been overshadowed by his more famous brother, just as he was by Tomas López in his career as a geographer. He is largely ignored in biographical sources and most of our information is found in the biographies of his brother Ramón and of López.[14] But in regard to the map this lack of recognition was undeserved and may have been the result of political circumstances at the time the work was completed.

DOCUMENTARY SOURCES

For over half a century the few documents published by Duro have been the only ones available. But they have now been substantially augmented by more than 60 additional letters, dispatches, and reports. During a stay in Madrid in June 1964, the author's efforts to locate the original archival materials from which Duro had made his selection were unsuccessful.[15] Subsequently, however, copies of these documents came to light in two nearly identical sets, one in Washington, the other in Santiago de Chile. The first of these was discovered in August 1964 in the National Archives in Washington among the records relative to the dispute between Argentina and Brazil over the Misiones area, arbitrated in 1894. Among the materials submitted in evidence by the Brazilian delegation are handwritten copies, made in 1893, of 62 documents on 80 numbered leaves. They relate to the Cruz Cano map and were dated from 1763 to 1802. Like those in Duro they are from originals in the Archive at Alcalá de Henares and carry the same file number, "Imprentos Legado."[16] Among them are the ones published by Duro, verbatim. Therefore, this is the group from which Duro made his selection. The Brazilian materials also include four pertinent documents from originals in the Archive at Simancas.[17]

Shortly after this discovery at the National Archives, it was learned that documents had been recently published by Professor Ricardo Donoso, with only a brief identifying comment.[18] These proved also to be from originals at the Archive at Alcalá de Henares, but copied in 1879 at the request of the Chilean govern-

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[13] Juan de la Cruz Cano, *Colección de Trajes de las Provincias de España*, 2 Vols. (Madrid, 1777).

[14] Emilio Cotarelo y Mori, *Don Ramón de la Cruz y sus Obras* (Madrid, 1899), pp. 15-17, 236-238. Marcel, *op. cit.* Cruz also receives a paragraph in Bermúdez, *Diccionario Histórico de los mas Ilustres Profesores de las Bellas Artes in España* Madrid, 1800), Vol. 1, p. 379.

[15] See footnote 5 above. The Archive at Alcalá de Henares was burned in 1936. Some documents had previously been transferred to the Archivo Histórico Nacional in Madrid. But the ones in question cannot be found there. Source: personal visit and subsequent letter from the Director, Louis Sánchez Belda.

[6] National Archives, Record Group 76, Records of Boundary and Claims Commissions and Arbitrations. Hereafter cited as NA, RG 76; Henares, —.

[17] Archivo General de Simancas, Secretario de Estados, Legado 7412, Folio Nos. 22, 23, 32, and 33. Hereafter cited as NA, RG 76; Simancas, Legado 7412.

[18] Ricardo Donoso, *El Mapa de la América Meridional de la Cruz Cano y Olmedilla*, Revista Chileña de Historia y Geografia, No. 131 (Santiago, 1963) p. 121-175. I am indebted to Dr. Ristow for bringing this article to my attention. Also to Professor Donoso for further explanation that the copies are in the Archivo Nacional, Colección Morla Vicuna, Vol. 126.

ment in connection with *its* boundary dispute with Argentina. They include the Henares documents at the National Archives—with texts identical except for errors of transcription. This identity of two sets, copied 14 years apart, indicates that the entire file has been reproduced. Donoso also included 7 letters which are *not* among those at the National Archives.

Finally, photocopies of four additional documents have been obtained directly from the archive at Simancas.[19]

Most of the documents from these various sources fall neatly into three groups. First are 38 letters, dispatches, bills, etc. which are concerned with the compilation, engraving and printing of the map and date from December 1763 to July 1776. The second group, closely related, consists of 15 letters dated April 26 to June 22, 1776, concerning the use of the map by a Consultive Junta appointed to advise the King in regard to boundary problems in South America. Finally, there are 23 items dated from January 15 to April 23, 1802, which reveal a renewed interest in the map and detail a wider distribution to government officials and the public. In addition are several significant documents which cannot be so neatly classified. Included here is a letter from Floridablanca to the Spanish ambassador in London (1786), a long complaint from Cruz to Floridablanca (1787), and, in Duro, the transcription of López's discourse before the Spanish Academy in 1797, and a shorter one ten years later by Bauza, a man with much experience in South America.

PAPER, ENGRAVERS, AND COPPER PLATES

We turn now to the documentary records of the map's construction. Here we find uncertain beginnings, basic change in objective, and slow progress, but eventually, after more than a decade and much careful work, a notable achievement. In 1763 the Marquis de Grimaldi became First Minister of State to Charles III, a post he was to hold until November 1776. His thirteen years in office span with but a few months to spare the period covered by available documents relative to the background and preparation of Cruz Cano's map. This is no mere coincidence because it is clear that the project was an official one for which Grimaldi was responsible. That he was also very much interested in it is evidenced by his direct participation as well as the frequent reference to "His Excellency" in the correspondence conducted by Bernardo Iriarte, a lesser official in the Ministry who appears to have been immediately in charge. The boundary controversies in South America and the attendant military and diplomatic exercises, especially with the Portuguese, must have demonstrated the need for a large-scale and detailed map of that continent. The earliest documents reveal that a large map was being planned and also are a reflection on the state of the arts in Madrid.

The record begins with an exchange of letters between Grimaldi and Ventur de Llovera, a Spanish official in Paris, in regard to paper, engravers, and printing plates. In December 1763 Grimaldi requested Llovera to purchase "six reams of paper which the French call *grand aigle* which is not to be found here... and... which is needed to print the plates which are being engraved by order of the King."[20] Llovera soon replied that he had purchased six reams of "Dutch paper though the price is higher than that of the French paper because of its being whiter and the printing stands out better. Also this Dutch paper is used by the Minister of War and Marine here (i.e. Paris) for this kind of work."[21] Llovera also reported that Hipólito Ricarte and another student of the Royal Academy of San Fernando "... have just arrived... I will take care of them in the same way I took care of those two engravers some time ago." This is the first mention of Ricarte who later was to engrave the lettering and print the map. It appears that he was sent to Paris to learn the art of engraving in the same way as Cruz Cano and Tomas López more than a decade earlier.

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[19] Simancas, Legado 7412, Folios 6, 15, 17, and 27.

[20] Grimaldi to Llovera, December 19, 1763, NA, RG 76; Henares, 1: Donoso, 130-131. *Grand Aigle* is an eighteenth century term to designate large-sized paper. The map was eventually printed on paper measuring about 26 x 36 inches. The plate impressions vary a fraction of an inch about the dimension 22½ x 35 inches.

[21] Llovera to Grimaldi, January 9, 1764. Na, RG 76; Henares 1-4: Donoso, 131-132. In a letter of March 26, Llovera reported the cost of the paper, including packing and shipping as far as Bayonne, was 1,635 tornesas, then about £ 3.8/- Sterling.

Fig. 2. THE CORRESPONDENCE BETWEEN THE TWO MAPS IN GENERAL OUTLINE SPEAKS WELL FOR THE KNOWLEDGE OF THE TIME AND THE ATTENTION OF CRUZ TO HIS SOURCES. A COMPARABLE ACCURACY FOR NORTH AMERICA WOULD HAVE BEEN IMPOSSIBLE IN THE 18TH CENTURY.

Madrid was dependent on Paris for copper plates as well as for paper and the training of engravers. In March 1765, Llovera wrote Grimaldi "the nine plates of copper for engraving that you asked me for on the 4th of this month are being prepared by the artificer Monsieur Tardieu, to whom I was sent because he has the right ones. This process is long and difficult he told me. I will be able to have only two of them each 15 days..."[22] The preparation of hand-hammered copper plates of this large size was a laborious task requiring a high degree of skill which was more likely to be found in Paris, a major center of engraving, than in Madrid.

ENGRAVING, PRINTING, AND COSTS

That the "engraving ordered by the King" was to be a map is clear from context as well as from the ultimate use of the paper and the copper plates for this purpose. Further, we know that, at the outset at least, the objective had been to make an engraved copy of a large manuscript map already in existence. This, and other details concerning the work, emerge from a flurry of correspondence in the autumn of 1766 stimulated by Grimaldi's impatience with the slow progress during the intervening months. On August 30 he wrote Tomas López, "two years ago I gave you a very precise General Map of South America to have it engraved carefully on plates given to you for this purpose... It is necessary for you to inform me about it immediately." López replied that Grimaldi was mistaken in thinking that the map had been given to him and explained "the only thing I know of this business is that sometime ago my partner, Cruz, was put in charge by you of this commission." An unnamed official visited Cruz and López and his reports to Iriarte give further indication of the methods being followed. We learn that Cruz had received the copper plates during the summer of 1765 but, a year later, had not begun the engraving because the *grand aigle* paper had not been delivered to him. The drawing of the map had been completed, but the lettering and the engraving remained major tasks that would require at least a year and a half of uninterrupted work. Cruz wanted to keep the "original map" (presumably the one he was copying) in order to avoid mistakes when engraving the lettering, but said that he would return it to Grimaldi if the latter needed it urgently. Meanwhile the official had arranged for delivery of the paper and suggested that both Cruz and López be assigned to the project so that the work could proceed more quickly, but there is no indication that this suggestion was acted upon.[23]

During the year 1767 a decision was made not to copy an existing map but to compile an entirely new one, and the procedures under which the map was ultimately to be completed began to emerge. This is covered in a very illuminating letter to Grimaldi in which Cruz, using the deferential third person, explained that since Grimaldi "entrusted to him the execution of the map of South America, he (Cruz) did not want merely to correct the map of Don Francisco Milhau y Miraval. Therefore, he had to make another new one, on a different projection (although the same size because of the size of the copper plates). The new map is to be based on all important maps and plans that were obtained from the Secretariat of the Indies. They are 62 in number, but even so they are not enough..." Cruz asked Grimaldi's assistance in obtaining source materials from other persons and agencies, complained concerning the lack of remuneration for his work, and suggested that Hipólito Ricarte be requested to engrave the lettering so that "the supplicant can work finishing the drawing and engraving the geography and decorations while another professor works

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[22] Llovera to Grimaldi, March 25, 1765. NA, RG 76; Henares 4-5: Donoso, 132-133. Tardieu is not further identified. But he must have been of the famous family of geographer-engravers and coppersmiths. From the date it was most likely Pierre Joseph, although possibly one of his brothers or older sons.

[23] Grimaldi to López, August 30, 1766. López' reply of August 31, followed by letters from the unnamed official and Cruz to Iriarte, Sept. 1-2, 1766. NA, RG 76; Henares 5-10: Donoso, 133-136.
There is no explanation as to why Grimaldi wrote to López in the first place and no indication that López worked on the map subsequently to this disclaimer. Only one other mention of him in the documents is when Cruz asked for the title of Geographer to the King for "my partner López" as well as for himself. (Cruz to Grimaldi, February 1771. NA, RG 76; Henares, 30-32: Donoso, 147.) Yet 30 years later, in his retrospective discourse before the Academy of History, López described in circumstantial detail an important collaboration with Cruz which ended only in 1771 due to a fundamental (but unspecified) disagreement (see Duro, *op. cit.* p. 399-404). But López's account is not entirely consistent with events as recorded more nearly at the time of their occurrence.

only on the lettering. In this way so prolonged a work can be advanced..."[24] The basic procedures had been formulated: a new map to be compiled from various sources, Cruz to gather the compilation material, prepare the preliminary drawings, and do all the engraving except the lettering. Several months later these arrangements became more formal when Cruz prepared an estimate of costs which, as shown in Table 1, included a clear division of labor with Ricarte responsible for engraving the lettering. This was approved by Grimaldi and Manual de la Mena was authorized to make the first payment to Cruz of 3,000 reales from the Gazeta and Mercurio fund.[25]

Progress continued to be made, but at a modest rate because Cruz continued to work at other tasks. In a report to Grimaldi in May of 1770, Cruz stated that the engraving (presumably of the geography) on plate 1 was complete, plate 2 nearly so, and some progress in hand on plates 3 and 4. But the lettering was not engraved on plates 1 and 2 until the next year and Ricarte received his first payment in February 1771. The further progress of the work as revealed by the timing of payments to Cruz and Ricarte can be followed on Table 1. Payment for lettering the third plate was not made until June 1773 and in July of the same year Cruz received 6,000 reales, his second remuneration in 5 years. The pace quickened in the final stages. Between April 1775 and July 1776 payments were made to Ricarte for lettering on plates 4 to 8 and for two printings, first in December 1775 and for a larger run in February 1776. Cruz also received two payments of 6,000 reales each and about 4,000 in addition for mounting (perhaps binding as well) and coloring an unspecified number of examples.

The total cost of the map was just over 41,000 reales or about £ 455 Sterling at the current exchange, with Cruz receiving about 60%. Cruz's estimate in 1768 (Table 1) had been low by a considerable margin. The cost of mounting had not been included in the estimate and Cruz himself received an extra 6,000 reales. The estimate for engraving the lettering was only $\frac{1}{3}$ of the actual cost. The rate remained the same, 32 reales per 100 words (palabras), but Ricarte received 4 times that rate for capitals and larger print. In addition, Cruz appears not to have allowed for corrections and grossly underestimated the number of words to be engraved, which was given as 38,000, counting the "large" print at four-fold. However, the low estimate for the lettering was balanced by Cruz's over-estimate for printing. Although definite figures are lacking it is clear that the number of examples actually printed was much below the 1000 originally proposed by Cruz; a figure of about 250 is much more reasonable.

SOURCES AND METHODS

A careful reading of the available documents reveals considerable information concerning the sources for the map and methods used in its construction. This despite the fact that the available record contains only official government communications, obviously incomplete, and nothing from the private correspondence or papers of Cruz and Ricarte. Particularly helpful are two letters from Cruz in which he reviews the progress of his work and which elaborate and serve as a check upon other letters.[26] As has been already noted

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[24] Cruz to Grimaldi, December 8, 1767. NA, RG 76; Henares, 11-14: Donoso, 136-138. In this letter we find the first mention of Millau (Milhau) as the author of the "General Map of South America" which Grimaldi originally wished to have copied. Unfortunately no map of South America as a whole is attributed to Millau prior to 1771. However, preserved at the Sociedad Geográfica in Madrid is a large (3.33 x 2.72 meter) manuscript *Mapa de una parte de América Meridional... Rio de la Plata, Paraguay e Indios Guaranies... hecho en 1768 por D. Francisco Millau.* It is possible that Cruz was using this map—perhaps in draft form—in 1765-1767. It is also possible that Millau produced a manuscript map of all of South America prior to 1765, a map which has been lost. In a letter of February 7, 1771, Cruz stated that he still had the "original" map (by Millau?) in his possession. Perhaps it was never returned to the Ministry of State. See José Torres Revello, *Francisco Millau y Maraval Geógrafo y Cartógrafo que actuo en el Rio de la Plata,* Anales de la Academia Argentina de Geografia, Vol. V (Buenos Aires, 1960), p. 107-117. Also Guillén, *op. cit.*, p. 11.

[25] Cruz to Grimaldi, July 18, 1768. NA, RG 76; Henares, 14-17: Donoso, 138-140. Mena was in charge of publication of the Gazeta and the Mercurio, newspapers which had been purchased by the government some years before, and he functioned somewhat as a government printer.

[26] Cruz to Grimaldi, December 8, 1767, and Cruz to Iriarte, March 31, 1770. Also several other letters in the period March 1770 to February 1771. NA, RG 76; Henares 11-14, 17-32: Donoso, 136-138, 140-148.

(page 55, above), when the decision was made to abandon the Millau original and compile a new map, Cruz was able to obtain 62 maps and probably manuscript reports from the Archives of the Indies. Josef de Ayala, Archivist for the *Consejo de Indies*, also had maps and manuscripts in his personal possession. Cruz mentions him several times and speaks of visiting his home to consult the sources. In 1769 maps by the Jesuit geographers were also obtained from the *Regulares de la Compania*. A map of the Rio de la Plata from Lazaro de Angulo and unspecified maps from Pedro de Avila were also mentioned. With his experience in Paris, it is not surprising that Cruz should have used French sources. In notes on the map itself various sources and authorities are mentioned including D'Anville, Delisle, Bowen, "our cosmographic missionaries," and an unnamed description of Cuzco printed at Lima in 1768.

It is also evident that various individuals examined the drawings or plates and made suggestions for improvement. In 1770 there were several letters concerning Cruz's consultation with Josef Florez and Firmando Seurra, Spanish naval officers who have not been further identified. Also, one of Ricarte's last invoices mentioned engraving of changes resulting from the "last annotations of Don Antonio Ullao,"[27] a recognized authority on the geography of South America.

Incomplete and non-specific as this record is, it is nevertheless clear that there was a considerable effort to obtain maps and source materials, manuscript and printed, from various sources. Also, the project was of sufficient importance to engage the attention of authorities. The objectives are indicated by a comment, presumably by Cruz, prepared when the map was completed in which he pointed with pride to the fact that the map showed the ancient names "for the understanding and verification of the history"; the various political boundaries and centers; and the roads and post stations in detail. "These three points no geographer has (indicated) until now. They are made known with difficulty after long labor with new and original sources."[27a]

Information concerning the methods used in the map's construction, sketchy though it is, is consistent with the evidence and claims of careful use of source materials. The most definite statement is in Cruz's progress report to Grimaldi in May 1770, in which he explains, "The biggest job is not the apparent one of constructing my map, but that of making copies and reductions without spoiling the originals... In the same way I have had to transfer all the printed maps from the 5th volume of the Geographical Atlas of Monsieur Bellin." Cruz was obviously making copies, apparently on paper and at the scale of the finished map. Whether he made a compilation from these, on paper before going to the plate is not clear. The division of labor was already established with Ricarte engraving the lettering, "He is the only one who has wanted to do this, little by little, interpolating this work with his personal work.[27b]" The only other evidence concerning methods is contained in the invoices where corrections and some additions on previously engraved plates are indicated, and we learn that proofs were prepared in November 1775, and Ricarte did a printing in February 1776 (see Table 1). From this it is hardly surprising to find evidence of substantial changes and existing examples of the map in various states and editions. To these complex questions we now turn our attention.

ANALYTICAL CARTOBIBLIOGRAPHY

From this survey of the map's origin and construction as revealed by documentary material we turn to an examination of its history of publication as revealed primarily by the internal evidence of the map itself, but also supplemented by documentary evidence. This aspect of the investigation was initiated in 1961 when the Library of the University of Kansas obtained a well-preserved example of the Cruz Cano map which proved to be a 19th century reprint from the original plates. Another example of the 19th century reprint was found in the Winsor Map Room at Harvard University, together with an 18th century printing on hand-made paper. Casual comparison of the two revealed that the names of the oceans were lacking on

[27] Ricarte and Cruz to Iriarte, January 1776. NA, RG 76; Henares, 46-47: Donoso, 156.

[27a] Iriarte to Grimaldi, November 14, 1775. NA, RG 76; Henares, 53: Donoso, 155. This dispatch transmitted proof sheets of the printed map together with an explanation, apparently by Cruz, from which these statements are derived.

[27b] Cruz to Iriarte, May 31, 1770. NA, RG 76; Henares, 19-22: Donoso, 141-143.

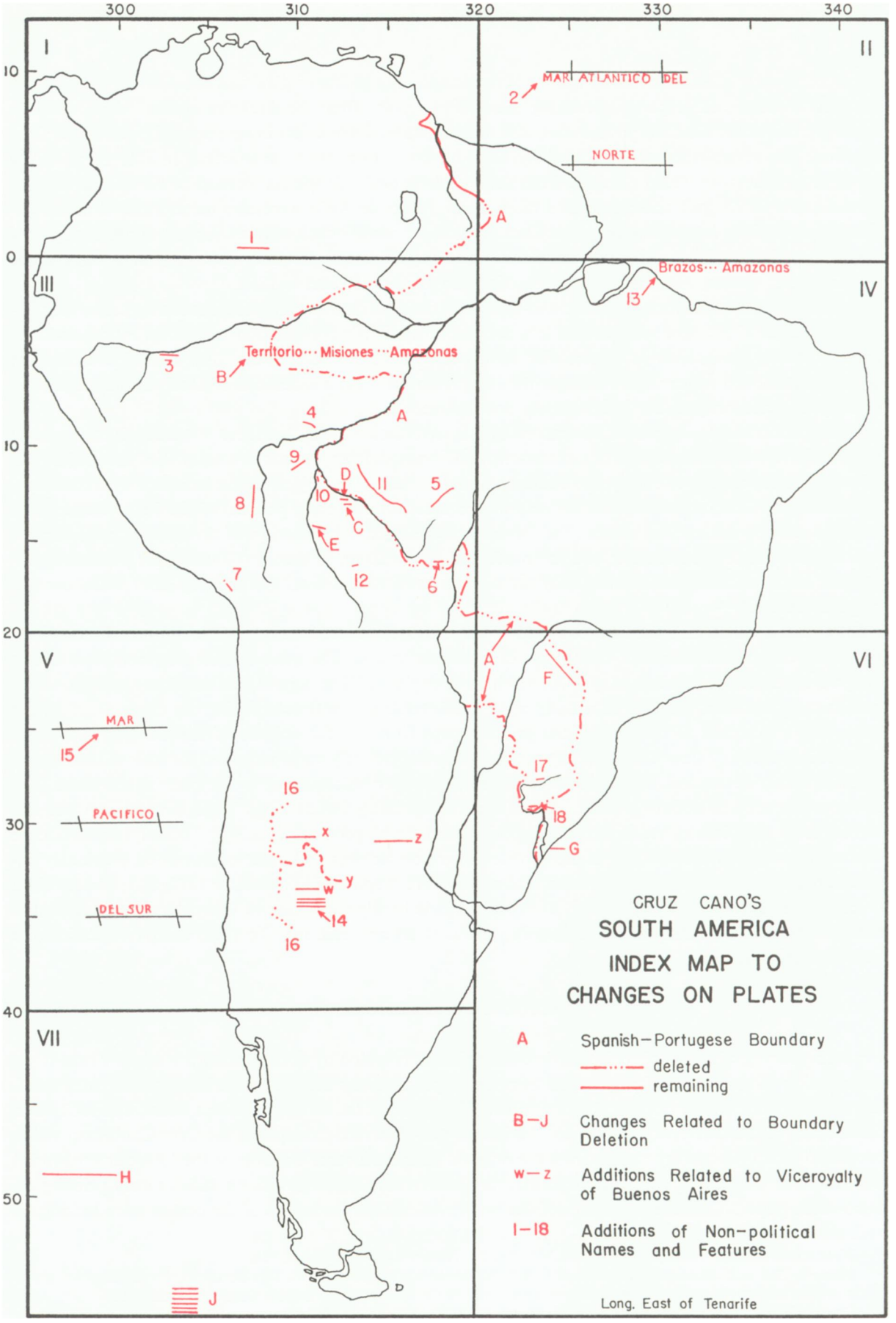

Fig. 3. ALL KNOWN ALTERATIONS ON THE PLATES SUBSEQUENT TO THE FIRST PRINTING ARE SHOWN ON THE MAP AND DESCRIBED IN TABLE 2. THE NAMES OF THE OCEANS HAVE BEEN TRACED IN PROPER POSITION FROM A PRINTED EXAMPLE AND LONGITUDE-LATITUDE LINES INDICATED FOR ORIENTATION. THIS WILL AID IN IDENTIFYING MANUSCRIPT INSERTION OF OCEAN NAMES AS ON MAPS 6-8 IN TABLE 3.

the earlier example.[28] This indicated differences in state or edition, no mention of which could be found in the literature. In order to determine the extent of the differences, full-scale photostats were obtained of the 18th century examples at Harvard, John Carter Brown, and the Library of Congress. Superimposed over a light table, these photostats were compared in detail with each other and with the 19th century reprint at the University of Kansas. It is hardly surprising that the latter turned out to be the latest state or edition, but it was quite fortuitous that the Harvard example proved to be one of the two known examples of the first edition—with the maps from John Carter Brown and the Library of Congress being different from each other and the other two maps as well. A total of thirty-one alterations have been identified so far. Seven plates are involved, only No. 8, restricted to title and decorations, having remained unchanged since the first printing on record.

This variance among the examples readily at hand pointed to the next task, that of examining or obtaining detailed reports on as many impressions as possible in order to establish the sequence in which the changes had been made, to identify different states and editions, and, if possible, to determine the approximate date of the editions. Detailed reports have been obtained for 28 of the 18th century and for 9 of the 19th century printings located in 26 libraries in 3 continents, the majority of which have been examined by the author.

The alterations are mostly in the form of additions to the plates, but there are some important deletions, and one or two changes of wording. There is also a grouping according to subject-matter which is related to the time sequence in which the alterations were made. First and most significant is the deletion of a major political boundary, considered as a single change although it occurred on six sheets and during two revisions of the map. In the same category are 8 changes relating directly or indirectly to Spanish-Portuguese territorial claims. Second, and most numerous, are 18 additions of geographical features, names, and notes which seem to have no political implications. In the third category are four insertions in present-day Argentina which relate to the establishment of the Viceroyalty of La Plata or Buenos Aires in 1776, nearly a year after the map was first printed. The Index Map (fig. 3) shows the location of these various changes, and they are described in Table 2 which also shows *when* a particular change was made, i.e. whether it occurred in connection with the revision for the second, third, or fourth state of the sheet in question.

THE BOUNDARY OF LIMITS AND RELATED CHANGES

A political boundary extended across South America from north to south on the first edition and was skilfully removed, mostly before the second printing. Its presence may have been a factor contributing both to the secrecy with which the map was handled as well as the lack of recognition suffered by Cruz. The boundary begins in the north, near the Esquivo River in modern British Guiana (see fig. 3). It swings southward across Amazonia in a compound S-curve through the eastern half of sheet No. 3 and continues to the Atlantic coast in southern Brazil with a western extension to the Parana River.

On the original first edition this line is represented by a distinctive symbol, a dash-three dots-dash line which is described in the legend as the "boundary of the missions between Peru and Brazil" (Table 2, item H). In the usage of the period this is clearly an indication of a division between Portuguese and Spanish territory. The origin of Cruz's delineation is obscure. He may have meant it to be the demarcation according to the Spanish-Portuguese treaty of 1750. But this demarcation was never definitely determined and there is only a rather vague similarity between Cruz's delineation and that shown on three somewhat different representations of the 1750 agreement on manuscript maps in the Archivo General de Simancas which have been reproduced by Guillén.[29] Further, Cruz draws what are essentially two boundaries (sheet No. 6) in an area which, at the time, was the scene of dispute between Spain and Portugal and subsequently between Argentina and Brazil. Here the southward continuation of the main boundary is identified as "The ancient border of Paraguay according to the most classic authorities" (see fig. 4), while roughly

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[28] I am indebted to my former assistant, Mr. Albert Palmerlee, and to Mr. James Romer, then Map Librarian at Harvard, for first calling these differences to my attention.

[29] Guillén, *op. cit.* plates 114, 115, 118.

parallel to the southwest, an alternate boundary extends from Rio San Pedro northwest to the Parana.

Originally engraved with great skill along rivers and through crowded print on the map, the "dash-dot-dot-dot-dash" boundary has been just as carefully removed. On most impressions, traces of it can be found only by the most careful examination in a certain few places. On sheet No. 2 the trace of this boundary remains (in part) as a dotted line for another type of political demarcation. Only one segment remained untouched: along the Esquivo River in the northeast section of sheet No. 1 (solid line on fig. 3) where the boundary is present on all printings of the map. This may have been an oversight since the offending line was deleted from the southeast corner of the same sheet and elsewhere from sheets 2 through 6. The deletion was one of the first changes to be made, being done as part of the revision between the first and second states on all sheets but No. 5 where the small segment of the boundary in the northeast appears to have escaped notice at this time (see Table 2). The deletion here was done later, for the third state of this sheet, and by a less skilled hand so that traces are more often discernable along this short segment of Rio Ypane guazu.

Most of the other changes which seem related to Spanish-Portuguese territorial questions were also made in connection with this first revision of the map. Two were directly dictated by the deletion of the boundary. One was the removal of the descriptive note which had been placed along side it (item F on sheet No. 6). More significant was the alteration of the legend caption for the boundary symbol, the first part of which was neatly changed to read "boundary of the demarcation line in Brazil" (item H, sheet No. 7). Since this alteration, the "dash-dot-dot-dot-dash" symbol has referred only to the longitudinal demarcation lines of the Treaty of Tordesillas which Cruz had engraved prior to the first printing together with a considerable explanation in the "Advertencias..." at the bottom of the map. These have remained unchanged in subsequent states. Also on sheet No. 7, to the right of the scales, a small legend, headed "Colores," was added to designate the colors to be used in indicating the territorial holdings of the five European powers.

Other changes in this general category were designed to de-emphasize the Portuguese while emphasizing the Spanish claims to contested territory. Two designations of settlements as "Portuguese" were deleted; on sheets 3 and 6, items C and G. Near the top of sheet No. 3 a regional name was added in large print which reads "Territorio de Misiones, Ó Pais de las Amazonas" (item B). This is a Spanish designation and was placed on the sheet so that it straddled the deleted boundary, thus in a sense extending the Spanish claim. All of these deletions, additions, and alterations, with the one exception noted, are found on the second states of the respective sheets. In addition, two references to a Spaniard named Maties Baulen were added on the third state of sheet No. 3 (items D and E) and can be construed as another effort to emphasize Spanish activity.

What conclusions can be drawn from this? The deletion of the boundary was a laborious task, skilfully done, for the most part during the first revision of the map. Since this and related changes involve all seven of the altered sheets and several kinds of alterations, they must have been done as the result of a definite decision involving Grimaldi and others reponsible for the map's construction. The motive for such a decision is found in the fact that the boundary favored Portuguese claims over the Spanish at a time when there were active disputes on these matters in South America and when, as will be shown later, Cruz Cano's map was being actively used by Spanish officials involved in the preparation of their country's case.

GEOGRAPHIC AND OTHER CHANGES

The second class of changes, those of a geographical but non-political character, involve seventeen additions and one text change (items 1-18) which are about equally divided between the first and second revisions of the map for states two and three, respectively. Six sheets, numbers 1 through 6, are involved, but about half of the changes are to be found on sheet No. 3 (see Table 2). Included are additions of ocean names, place names, physical features, and the completion or insertion of several explanatory notes on the map itself. One change of a river-name on sheet No. 6 (item 17) assumes considerable importance since it is a key to dating the changes. Further details in regard to these changes may be found on Table 2 and figures 3 and 4. The significant conclusion derives from the fact that there is a considerable spread in type, in space (six

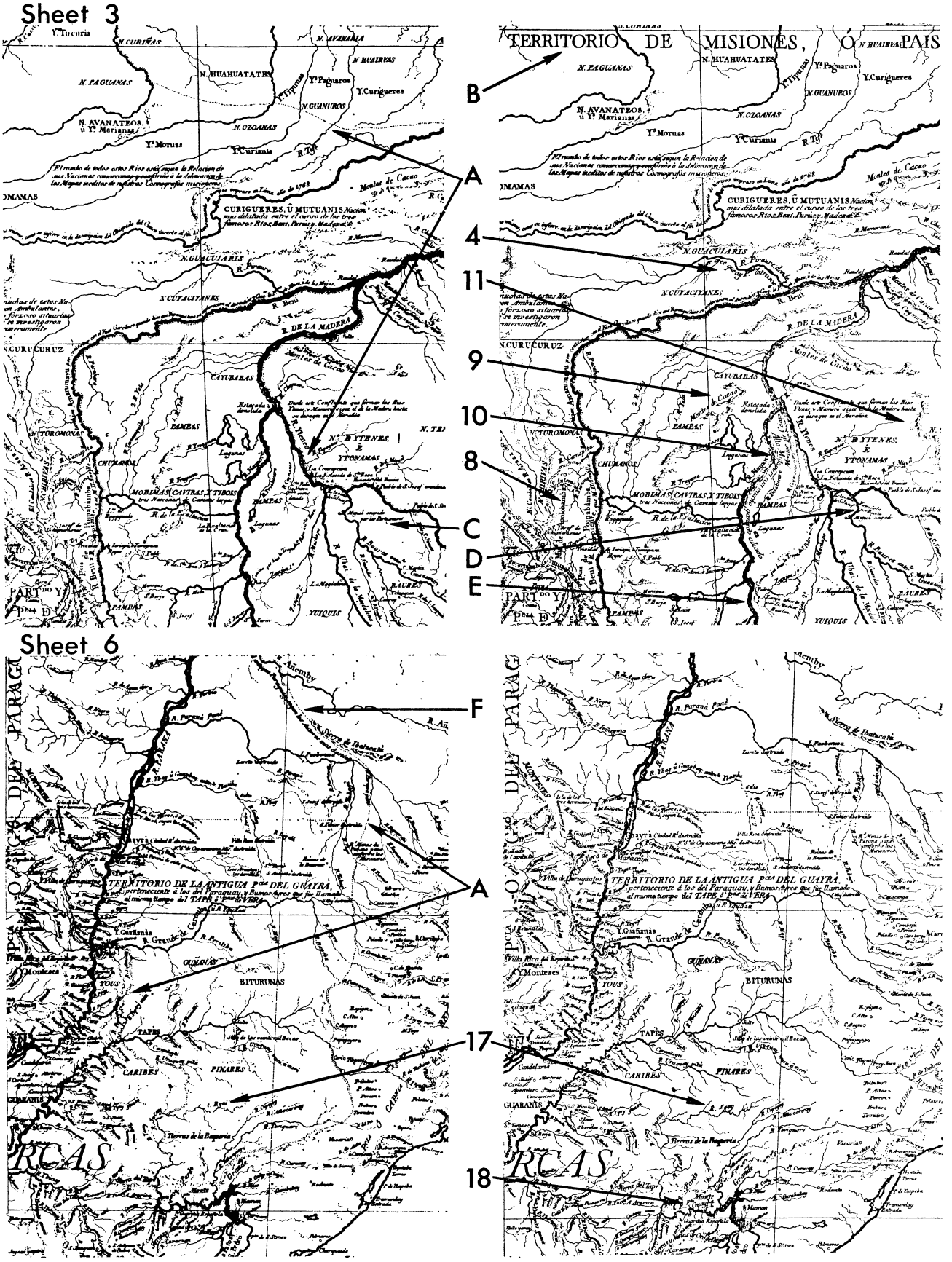

Fig. 4. PORTIONS OF SHEETS 3 AND 6 ILLUSTRATING THE ALTERATIONS BETWEEN THE FIRST STATE (LEFT-HAND MAPS) AND THIRD OR LATEST STATE. LETTERS AND NUMBERS IDENTIFY ALTERATIONS WHICH ARE ALSO LOCATED ON FIG. 3 AND DESCRIBED IN TABLE 2. THE LOWER ARROW FROM A IN SHEET 6 POINTS TO THE BOUNDARY ALONG THE SAN ANTONIO AND PEPIRY RIVERS IN THE AREA DISPUTED BY ARGENTINA AND BRAZIL IN THE MISIONES DISPUTE (SEE P. 59-60).

sheets) and in time (two revisions). This suggests that the map was being systematically reviewed and that some mechanism existed for getting suggested changes applied to the plate.

The third group of changes is found only on sheet No. 5 in its fourth and final state and is related to the internal political arrangements of the Spanish administration. On this sheet the abbreviation for "New Viceroyalty" (item z) was added as a prefix to the name for the Province of Buenos Aires. Farther to the west the old province of Cuyo was divided into the provinces of Mendoza and S. Juan de la Frontera and a new boundary was drawn between them (items w-y). These changes must have been made after the establishment of the Viceroyalty of Buenos Aires in 1776-1777.

SEQUENCE OF STATES AND POSTULATED EDITIONS

When these changes are considered *en toto*, the map appears to have been reworked three times to produce four distinct editions of the map as a whole. There is no indication of this on the imprints which remain unchanged from the first printing of record.[30] Nor is there any mention of editions or regular revisions in the literature or the documents. Nevertheless, the internal evidence of the map itself—the sequence of states for the individual sheets and their combination—makes it possible to recognize the four "regular" editions as well as "variants" which do not exhibit the proper combination of sheet-states. The basic information is presented in Table 3 which consists of an array showing the state of each sheet of every example of the Cruz Cano map for which detailed information has been obtained. Included in the array are 28 examples printed on hand-made paper almost certainly during the 18th century, the re-engraving made by William Faden of London in 1799 (map 19), the nine examples clearly identified as a 19th century reprint, and a 1963 reprint as representative of impressions still being taken from the original plates.

The first edition for the map as a whole is postulated as one in which all sheets are in their first state. There are two known examples. The one in the Winsor Map Room at Harvard is on separate, unmounted sheets of hand-made paper on which the watermark of a Barcelona paper manufacturer can clearly be seen. Nothing is known of its provenance except that it was obtained with the library of Hamilton Rice who was an active collector in the inter-war years. The example in the Ayer Collection at the Newberry Library in Chicago was purchased in 1934 from García Rico in Madrid for 100 pesetas.[31] The map is trimmed to the inner border (compare fig. 1), cut into 64 pieces, and mounted on heavy cloth which makes it impossible to determine the watermark by visual methods.

The first revision of the map produced the second edition in which sheets 1 through 7 are all in second state. The only example is in Madrid at the Servicio Histórico Militar. Two other examples in Madrid are variants of the second edition. By definition, this means that they have no sheet later than second state, but vary from the postulated combination for the edition in that one or more sheets which *should* be in second state are in fact earlier, as in the case with sheet No. 6 in maps 4-6 in the array.

The "Humboldt" at the American Geographical Society of New York is representative of the six examples of the third edition (maps 9-14), with sheets 2, 3, 5, and 6 in third state. Seven other examples are variants of the third edition and Faden's re-engraving is in this group (maps 15-22). Finally, the list of the 18th century printings is completed by the 4 examples of the fourth edition, depending upon the fourth state for sheet No. 5 and the 3 variants (maps 23-29).

The arrangement of the array in Table 3 provides further support for the thesis that editions of the map were, in fact, produced. This is indicated by the incidence of sheet-states among surviving examples. Study of the array reveals that the twenty-eight 18th century printings may be divided into two groups; maps for which there is more than one example with identical combinations of sheet-states as opposed to maps which, so far at least, are unique in this respect. The first group consists of four cases in which there are two or more maps with identical collations of sheet-states. Fourteen maps are involved, numbers 1-2, 7-8, 9-14,

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[30] There is precedent for this, if such be needed. Stevens and Tree, *loc. cit.* identify 5 editions of the Mitchell map, the last dated ca. 1778, despite the fact that all impressions are dated 1755 and give no indication of edition.

[31] Information on provenance from personal correspondence with Mr. James Romer and Mrs. Kirk Bryan, Winsor Map Room at Harvard, and Mr. Colton Storm, Ayer Collection at the Newberry Library.

and 23-26. Except for maps 7 and 8, these are "regular" editions: the first, third, and fourth. The fact that multiple examples of these regular editions have survived suggests a centralized and organized origin for them. This is consistent with the hypothesis that editions were in fact prepared, printed, collated, and ultimately distributed as such. Conversely, for the other group of fourteen maps, there are no duplicate combinations of sheet-states among the 18th century printings. With the exception of the single surviving example of the second edition, these are all variants. Their combinations of sheet-states appear as the chance results of less-organized collations; perhaps by the original publisher, more likely subsequently and at the hands of dealers and collectors.

DATING THE EDITIONS—GENERAL CONSIDERATIONS

The dating of plate changes on an old printed map is a complicated task, often leading to indefinite conclusions even when the notation in the imprint recognizes the existence of editions or issues. In this case most of the changes were made prior to 1785 and most likely within a year or so after the first printing in 1775. Considerable evidence indicates the printing of the first edition in October or November of 1775, the second edition in the following February, the third edition later in the same year, and the fourth edition no later than 1802. This evidence is found in watermarks; in contemporary documents with references to printing, paper, and isolated changes on the plates; and in the sheet-states of maps whose existence can be verified prior to 1802.

Watermarks provide positive but not conclusive evidence to support the hypothesis that all editions were printed within a relatively short, but unspecified, period. The same watermark is found on 141 sheets out of the 224 which comprise the 28 original, 18th century examples. The mark occurs on all 8 sheets of the first edition at Harvard. It has been discerned on at least one example of each state of every sheet including, most importantly, the final states of the fourth edition. The mark in question is "F^{00} GVARRO" with tower which is illustrated as No. 3933 in Heawood's treatise.[32] This is the mark of a paper-manufacturing firm in Barcelona, L. Guarro Casa, which is still in existence.[33] So, despite the fact that Dutch paper was originally purchased in 1763 and delivered to Cruz in 1765, Spanish paper was used throughout the 18th century printings and this fact suggests a relatively short lapse of time between the first and the last states or editions.

The significance of this evidence is not diminished by the fact that other papers were used during these same printings. Careful examination reveals no watermarks on 18 sheets. Also, one other watermark has been found, but only on one single sheet. It is the mark of a Dutch firm and its existence raises questions which are better considered in the next section.[34]

The hypothesis of a short period for the original printings finds additional support in the survival rate of the several editions. Only eight examples earlier than the third edition have been reported, while two-thirds of the total are third or later editions. This also suggests a relatively short period during which these editions were produced, together with strict control over the distribution of the first two editions. But this evidence, provided by both the F^{00} GVARRO mark and the survival-rate of editions, is permissive. More positive basis for the dating—especially of the first two editions—is to be found in the documentary material.

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[32] Edward Heawood, *Watermarks Mainly of the 17th and 18th Centuries* (Hilversum, 1960). The two most likely maps for Heawood to have examined, at the British Museum and the Public Record Office (transferred from the Colonial Office) in London, both have the F^{00} GVARRO mark.

[33] I am indebted to Mr. Fernández Jiménez of Madrid for identifying the firm. Subsequent correspondence indicated that their records do not provide information concerning the period of use for this particular mark.

[34] Eight examples of the map are mounted on such heavy cloth as to preclude the accurate determination of watermarks. The summary tabulation is as follows:

141 sheets - Spanish paper - F^{00} GVARRO
18 sheets - no marks found
1 sheet - Dutch paper - D & C Blau
64 sheets - marks (if present) not visible
224/8 = 28 examples of the map

FIRST EDITION—NOVEMBER 1775

Cruz and Ricarte finished the engraving sometime during the summer of 1775[35] and the first printing was not long delayed. In mid-November of that year Iriarte reported to Grimaldi, "I send you the first proof-sheets of eight plates. I have given an order to print, mount, and color some more examples in case you would like to show one to the King..." The letter continues at length on other matters. But in a postscript Iriarte explained that "the proofs are not well printed because the paper is from Holland and needs special preparation... all of this will be fine on the second proof."[36]

From this it is clear that the first printing was underway in November 1775. The run was small, probably about fifteen examples (120 sheets) as indicated by the charge of 169 reales for this printing in the invoice of December 8 (see Table 1). A later invoice includes charges for mounting and coloring seven examples of the map,[37] perhaps the presentation copies for the King.

In view of this mention of Dutch paper, it is surprising to find only a single map-sheet on paper with a Dutch mark. It is sheet No. 1 of the example at the Biblioteca Nacional in Madrid and is *second* rather than *first* state. The other seven sheets of this example all are on paper with the Spanish mark including No. 6 which is in first state (see Table 3). In fact, the Spanish mark is the only one found on first-state sheets.[38] This absence of Dutch paper among surviving examples of the first edition, despite Iriarte's remark, can be explained only by conjecture. The most likely explanation is that the stock of Dutch paper originally purchased in Paris has been greatly depleted in the interim. Iriarte's promise of a better printing for the second proof suggests that he may have planned to use different paper for the printing in February and a new purchase of Spanish paper was authorized in July. But it is also clear that the Dutch paper was not entirely lacking, because at least one sheet was used in printing the second edition.

SECOND EDITION—FEBRUARY 1776

After the first printing in November 1775, revisions were made on the plates and, a few months later, the second edition was printed. Ricarte, the engraver of the lettering, did this printing. In February 1776, he reported on it in a letter to Iriarte. "My officials do not stop working. This week we will complete six hundred, but not all in the same proportion because Don Juan de la Cruz has not finished the removal of the entire boundary *(no a concluido de barrar del todo la linea)*. For next week I need paper to wet... send me 3,000 reales on account of the printing."[39] This was a sizeable run. Six hundred sheets had already been printed and more paper needed for additional printings. Ricarte did not say how many plates he had printed, so we cannot be sure of the size of the run; but at one-and-a-half reales per sheet, 3,000 reales would pay for 250 examples of the eight-sheet map.

Even more significant is Ricarte's cryptic reference to Cruz's removal of the boundary. This is the only comment on this important deletion which has been found in the contemporary documents. There can be no doubt that "la linea" refers to Cruz's delineation of the Spanish-Portuguese boundary because this is the only "line" which has been removed from the plates, and, as we have seen, this was an important revision for the second edition. It is hardly surprising that this was done so promptly. The map had been long in the making and, no doubt, its appearance was eagerly awaited by Grimaldi and other officials responsible for the negotiations with the Portuguese. Therefore, the representation of political details

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[35] Grimaldi to Meua, August 30, 1775. NA, RG 76; Henares 38: Donoso, 152. Grimaldi authorized the payment of 6,000 reales to Cruz and added, "Cruz has finished the South America map upon which he has been working by order of the King."

[36] Iriarte to Grimaldi, 14 November 1775. NA, RG 76; Henares, 39-44: Donoso, 152-155. The first portion, but not the postscript, is also found in Duro, *op. cit.* p. 408.

[37] The invoice is not dated, but payment was authorized on January 25, 1776. The invoice also included charges for corrections on the plates, presumably after the first edition had been printed. NA, RG 76; Henares, 46-47: Donoso, 156.

[38] On Table 3 we note that 10 examples (maps 1, 2, 4-6, 15-17, 27 and 28) contain one or more sheets in first state. There is a total of 23 such sheets in addition to sheet No. 8. The F[00] GVARRO mark is present on 15 of them. The remaining 8 are mounted on heavy cloth (maps 2 and 4) so that the mark is undetermined.

[39] Ricarte to Iriarte, February 22, 1776. NA, RG 76; Henares 47: Donoso, 157. The payment was authorized on February 24.

would probably be scrutinized with care. What is more surprising is that there is no mention of the boundary or its deletion in Grimaldi's correspondence. But it is clear that the documentary record is incomplete in this regard and there must have been more material relative to the map than has yet been brought to light.

Two other documents support the conclusion that the second edition was printed in February 1776, and provide the one and only contemporary designation of a specific and identifiable alteration on the plates. In the spring of 1776, the Spanish government was preparing for negotiations with the Portuguese which, it was thought, would be held in Paris. Consequently, there was considerable correspondence between Grimaldi and Count Aranda, the Spanish Ambassador to France who was to participate, and Cruz Cano's map is mentioned in several letters. One such was in May, when, after a discussion of Jesuit maps of the La Plata area, Grimaldi informed Aranda "... on the large map of South America composed and engraved by Juan de la Cruz... the headwaters of the Rio Grande de San Pedro is given as Rio Ryai and it should read Igay."[40] Two weeks later Aranda replied directly to this point, "I will correct the name of Rio Ryai writing in Igay on the new large map by de la Cruz according to your orders for correcting the already issued examples."[41]

The locality in question is on sheet No. 6 (item 17) in what is now the southern extremity of Brazil. On the latest editions of sheet No. 6 the river's name is "Igay." On the Harvard example it is the unchanged "Ryai," located so that the offensive Spanish-Portuguese boundary forms a semi-circle within an inch of the river-name in this particular area (see fig. 4). It seems highly unlikely that Grimaldi would have restricted his comments to a name-change of a minor river, *if* the questionable Spanish-Portuguese boundary has been so close to it. Therefore, a reasonable conclusion is that Grimaldi and Aranda had before them examples of sheet No. 6 with the river-name *unchanged*, but from which the dash-dot-dot-dot-dash boundary had *already been deleted*.[42] This conforms to the second state of sheet No. 6 for which corrections were made along with those for the other sheets to produce the second edition for the map as a whole. So a larger conclusion is inescapable—by May of 1776 the second edition of Cruz Cano's map was in the hands of Spanish diplomats in Paris as well as Madrid. Further, since there is no record of other printings prior to May, the second edition must have come from the press in February 1776, the plates having been altered in the interval following the first edition of November 1775.

THIRD AND FOURTH EDITIONS—1776-1785

The basis for dating the third and fourth editions is a good deal less definitive than that for the first and second. It is quite certain that the third edition was printed sometime between July 1776 and late in 1785. Further, there is a strong presumption that this occurred near the beginning of the period, and a similar inference for the fourth edition. For the third edition the evidence is provided by two examples of the map whose existence can be confirmed prior to 1814 together with a final letter from Grimaldi.

The first of these is the "Humboldt" map, a prized possession of the American Geographical Society of New York. His ownership is attested by a note on the face of the map which reads, in translation from the original French, "A. Humboldt, the original of La Cruz of which the plates have been destroyed in Madrid (Purchased at Paris 15 Napoleons)." Other records support this provenance. Shortly after the great man's death, Henry Stevens, the London antiquarian book dealer, purchased Humboldt's massive library. Four years later, in 1863, he published The *Humboldt Library, A Catalogue*... of 791 pages in which the Cruz

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[40] Grimaldi to Aranda, Madrid, May 23, 1776. Simancas, Leg. 7412-15.

[41] Aranda to Grimaldi, Paris, June 7, 1776. Simancas, Leg. 7412-6.

[42] This particular change had escaped notice during the author's early examination of various examples of the map and was discovered only by reading the photocopies of the documents obtained in January 1965 from Archivo General de Simancas. At this time sheet No. 6 was thought to be in only two states—differentiated by deletion of the boundary and note (items A and F). Check of the 19th century reprint against the Harvard photostat led, *a priori*, to the hypothetical new second state which the photostat of the John Carter Brown example proved to exist in fact. Inquiry by correspondence brought the total to seven examples of the second and eighteen of the third state for sheet No. 6 (see Table 3).

Cano map was listed as lot 2023 with a full transcription of Humboldt's manuscript note. Somehow the map survived the serious fire at Stevens' warehouse which destroyed most of the Humboldt library in June 1865 and we find it next recorded in a manuscript "List of purchases..." at the AGS among 761 "rare geographical works and atlases" acquired in 1869 from Henry Stevens.

Although he does not date his acquisition, Humboldt must have obtained the map sometime before 1814 for in that year the first volumes of his *Voyages* appeared with a favorable reference to the "original edition which I possess" on page 537 of volume II. Also, he must have acquired it *after* his return from South America because the *Napoleon*, the 20-franc gold piece with which he purchased it, was not minted until 1804. Finally, when we examine the AGS "Humboldt" for state, we find that it is a third edition (Table 2, map 9) printed on hand-made paper, but mounted on such heavy cloth and additional paper as well so that the mark cannot be determined. Nevertheless, it is clear from this that the revision which produced the third edition was made no later than 1813, the latest possible year for Humboldt to have acquired the map. Most likely the revision was done at a considerably earlier date.

The existence of the Faden re-engraving allows us, with similar reasoning and even more certainty, to push this date back to 1785. In a recent article, Dr. Walter Ristow of the Library of Congress has developed a convincing argument that Faden engraved his copy from an original purchased in 1785 by an American diplomat at the auction of a Spanish gentleman's library and sent to Thomas Jefferson, then American Ambassador in Paris. In August 1786, Jefferson asked W. S. Smith, a friend in London, to arrange for the re-engraving and made suggestions as to the format to be followed. In September Smith reported that arrangements had been made with Faden; Jefferson forwarded the map in December 1786. Thirteen years later, in 1799, the re-engraving finally appeared which incorporated several of Jefferson's suggestions.[43]

By superposing a full-scale photostat of the Faden over a similar photostat of an 18th century original, one can determine that Faden did indeed made the exact copy that he claimed in the imprint note on the map itself. His line-work is so nearly identical as to have been traced. The map is entirely in Spanish and the lettering is the same as on the original, although sometimes differently placed. If we accept this evidence along with Ristow's conclusion, then the state of the Faden must be identical to the state of an original owned by a Spanish gentleman in 1785. On examining the Faden for changes on the plates we find it to be comparable to a variant of the third edition in which the area of sheets 2 and 5 are in third state, but sheets 3 and 6 remain in second state rather than third[44]—a collation of sheet-states identical to that of the example in the Boston Public Library.[45] Since it contains sheets in the third state, the original which Faden copied must have been collated after the printing of this edition. Therefore the third edition must have appeared sometime between 1776 and 1785.

A strong indication that this took place near the beginning of this period is to be found in a final letter of July 1776, in which Grimaldi notified Mena that another official "has been charged with arranging the manufacture of eight reams of Imperial paper in Cataluna. This paper is to print the South America map..." and Mena was ordered to make the funds available.[46] Another printing on Spanish paper was clearly being planned in the summer of 1776. But here the available record relative to the construction and early revision of the map ceases. Grimaldi, who had been a key figure, following the project from its inception, was dismissed as Minister of State early in November of 1776, and replaced by Count Floridablanca. We are left with the strong possibility that the third edition may have appeared during the latter part of 1776, but documentary support has yet to be found.

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[43] Ristow, *loc. cit.* In addition, Ristow provided much of the information which Julian P. Boyd acknowledges as a basis for the editor's comment in regard to this matter in the *Papers of Thomas Jefferson*, especially Vol. X, p. 212-217.

[44] Faden's map is in six sheets rather than eight so that the sheet lines do not coincide with the original.

[45] This coincidence gives rise to the intriguing speculation as to whether the example in the Boston Public Library might be the "'Jefferson." One of Jefferson's requests had been that the original be returned to him together with several examples of the re-engraving. An example of the Faden, but not the original Cruz Cano exists in Jefferson's Library.
Little is known of the provenance of the example at the Boston Public Library other than that it came to the Library in 1914 as a part of the bequest of the private library of Francis Skinner, Harvard '62, who died in 1905. Jefferson frequently made "secret" marks on his books. etc. "But there is no apparent clue to Jefferson's possession" of this example. (Personal communications from John Alden, Keeper of Rare Books, Boston Public Library: November 12, 1964 and March 22, 1965.)

[46] Grimaldi to Mena, July 16, 1776. NA, RG 76; Henares 49-50: Donoso, 158.

It is regrettable that neither the Faden nor the Humboldt show sheet No. 5 in its fourth and final state. But this may have resulted from the chance of collation, increased no doubt by the fact that both originals had been in private hands. As we have seen, the changes for the fourth edition were four in number, affecting only sheet No. 5, and are to be found printed on hand-made paper with the F^{00} GVARRO mark. Further, all four changes were related to the establishment of the Viceroyalty of Buenos Aires in 1776-1777. Since this took place within the period when the map was being actively worked on, it is a tenable assumption that these changes, like the others, were made prior to 1785 and probably closer to 1776. Certainly there is no indication that any changes were made on the plates after 1789 when they were deposited at the Calcografia in Madrid (see below p. 70-71).

SUPPRESSION AND CONTROL

The final objective of this paper is to review the reception which Cruz Cano's map has enjoyed in Spain and elsewhere. What have been the opinions concerning it? To what uses has it been put? What has been the history of publication subsequent to the early printings? Complete answers to questions of this sort are impossible since there are so many more "opinions and uses" than are recorded. But there are a number of comments and reports in the records, published and documentary, which provide useful insights at various points in time during the nearly 200 years that the map has been in existence. In Spain during the first quarter-century of its existence, the map had a varied reception. It was used in government councils, but was withheld from the public, while its author was virtually ignored and disparaging remarks were sometimes made concerning it. Later, around the turn of the 19th century, the reputations of both Cruz and his map were somewhat rehabilitated and it was made available to the public.

One version of these events received considerable credence and was repeated, with variations, during at least two decades after 1784 by different individuals including Jefferson and Humboldt as well as Spanish officials. According to this account, Cruz Cano's map was well received, both within and outside official Spanish circles, when first published and distributed. But then errors were discovered, the Government quickly changed its view, and the map was withdrawn from sale and efforts were made to retrieve the examples already distributed.

We find the germ of this account in two letters which Carmichael, who obtained the map for Jefferson wrote from Madrid in 1785. He commented on the difficulty and expense of obtaining an example because the map's sale had been prohibited for some years, although he believed "that a few copies have got abroad."[47] A year later Jefferson was more explicit in his first letter to Smith in London, explaining that "The government in Spain first permitted the map, but the moment they saw one of them come out, they destroyed the plates, seized all the few copies which had got out and on which they could lay their hands, and issued the severest injunctions to call in the rest and to prevent their going abroad."[48] This is the first mention of the erroneous rumor of the destroyed plates, and Jefferson appears not to have publicized it. But Humboldt provided wider circulation and added authority for this rumor when he wrote, "The original edition, which I possess, is the more rare, the plates have been broken, it is commonly believed by order of a minister of the colonies..."[49] Antiquarian dealers, for whom such a statement would be a strong selling point, perpetuated the tumor for 150 years. In addition to the initial citation in the Steevens *Catalogue* of 1863, we find Humboldt quoted on the destruction of the plates in Bernard Quaritch's *General Catalog* for 1874 (item 9532); and also by Henry N. Stevens in a personal letter of April 16, 1915, offering the map to G. P. Winship of the John Carter Brown Library,[50] and again in a catalog description of the same example in 1936.[51]

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[47] Boyd, *op. cit.*, Vol. IX, pp. 105, 169.
[48] *Ibid.*, Vol. X, p. 212. Jefferson's letter was dated August 20, 1786.
[49] See footnote 4.
[50] A copy of the original letter in the files of the John Carter Brown Library was kindly provided by Miss Jeannette Black.
[51] Henry Stevens, Son & Stiles, *A Catalog of Maps*... N.S. No. 23 (London, 1936), Item 1027. This map was purchased in 1943 by the Library of Congress and is included as map 28 in Table 3.

That this version of events should have been current among Spanish officials of the 18th century should cause no surprise. In 1786 Count Floridablanca, Minister of State, wrote to the Spanish ambassador in London, "The map of South America which was engraved here has not been allowed for sale as it is full of errors and lacks exactitude in the most principle points, and for that reason has not been published.

"I am telling you this since they are again engraving the same map there (i.e. in London), according to your comments of October 24th. It does not merit the credit that those interested in selling it want to give it, and it is only right that you should know about it."[52] From the dates it appears that the Spanish ambassador had learned of Faden's plan to re-engrave, even though Jefferson's original had not reached London at that time.[53] Floridablanca was obviously trying to discourage the project by discrediting the map, although he neither specified the deficiencies nor cited authority for his critical views. These may have influenced Floridablanca's subsequent reaction to a long letter from Cruz in which he complained of the lack of recognition for his map, his poor financial position, and asked, almost begged, for some sort of government position. The official who forwarded this letter to Floridablanca did not recommend an appointment for Cruz, but suggested that he be given "something even though it may be a matter of charity." Floridablanca authorized the payment to Cruz of a modest 750 reales "all at one time."[54] The available record of official correspondence with Cruz ends on this unhappy note of charity and without any favorable comment concerning the map.

The most detailed discussion of the reaction to Cruz Cano's map was presented by López in his discourse of 1797. In several paragraphs on this particular point he gave the familiar account of early acceptance and distribution and then attributed the change of view to the attempt to use the map in negotiations with Portugal where it had been found that "instead of bringing us advantage, it (the map) was prejudicial" to Spanish claims. Therefore, further printing or distribution was prohibited and attempts were made to recall examples already sent out. This being difficult the government "decided to discredit the map as being barely exact in order to get it back and set about again to obtain its better perfection, always keeping from the public what the boundaries were, which was the essential defect at that time."[55]

There is a considerable similarity in these statements from five individuals extending over the period 1785 to 1821. It is less likely that there was a single common source than that the accounts retold a version that had considerable acceptance in informed circles. Yet there is a lack of definiteness in the accounts. None of them cited any authority. Nor was any one at all specific in regard to the map's alleged deficiencies. In addition, there is no reference to any of the various revisions which we know had taken place. It is almost as if these men were retelling a well-established rumor. Even López, Cruz's sometime associate and the only one of the five to mention political boundaries as the major defect, was not specific as to which boundaries were in error and appeared to be unaware of the fact that the Spanish-Portuguese boundary had been deleted.

It is unnecessary to assume a major reversal of official opinion and policy in order to explain the undoubted scarcity of the map. All the evidence at hand indicates a consistent policy of strict control and limited distribution. At the time of the first printing in 1775 Iriarte directed the printer not to print any more than he had been authorized and not to show to anyone the examples already printed. Iriarte also

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[52] Floridablanca to Marquis del Campo, December 22, 1786. Donoso, *op. cit.* p. 122, is the only source for this letter, copied from an original one in the archive at Alcalá de Henares.

[53] We have only Floridablanca's reference to the Ambassador's letter which was written about a month after the arrangements had been made with Faden but before the Jefferson map was in his hands. The ambassador's sources of information must have been excellent. Boyd apparently did not know of the existence of this letter which supports his explanation for the delay in Faden's completion of the map until 1799. Boyd suggests the delicate relations between France and Spain in the 1780's made it inexpedient for the Geographer to the King to reproduce a map which the Spanish government did not wish to see publicized. Now we know that the Spanish officials knew of the project. On receiving Floridablanca's letter the Ambassador would surely have tried to cause a delay or cancellation of the project.

[54] Cruz to Floridablanca, October 3, 1787. Payment was authorized three days later. NA, RG 76; Henares, 50-54: Donoso, 158-160: Duro, VII, 408-409.

[55] Duro, *op. cit.* p. 402-403. Marcel and, through him, Ristow follow closely the version given by López. The difficulty here, as suggested earlier (footnote 23) is that the documentary record of 1763-1776 does not reveal such close participation in the project as López claimed 30 years later.

made special arrangements for the safekeeping of the plates and concluded, "I have taken my precautions."[56] These precautions were not related to any alleged defects because printed examples had not been distributed, much less reviewed. They can be better interpreted as security measures for a document which the authorities wished to keep under control. There is no indication that the restrictions were relaxed, and all distributions of the map of which we have record (about 40 examples through March 1802) have involved written authorization from some official in the Ministry.

USE BY GOVERNMENT OFFICIALS

While controlling the public access to the map, the Ministry made it available to officials who needed it. The records reveal distribution of 9 or 10 examples during the first few months, not counting those presented to the King. As has already been noted (p. 65), the second edition was in the hands of Grimaldi and Aranda, in Paris, by May 1776. Early in June five more examples were distributed to members of a Consultive Junta appointed to advise the King and to assist Grimaldi and Aranda in preparing for anticipated negotiations with the Portuguese. Grimaldi placed the Junta under the direction of Joseph de Gálvez, Minister for the Indies. The chairman was Pedro de Cevallos, an official with long experience in South America, who was to become the first Viceroy of the newly formed Viceroyalty of Buenos Aires in October 1776. His four colleagues on the Junta were also members of the Council of the Indies with experience in South America. At the end of a long letter appointing the committee and discussing the problems that it was to consider, Grimaldi ordered that each member be provided with an example of the Cruz Cano map.[57] The records show that this was done and also that two additional examples of the map were sent to the Junta a few weeks later. This was the result of a letter from Aranda who asked that certain territorial claims be drawn on two examples of the map; one to be sent to him in Paris, the other to remain in Madrid. Aranda's letter and the maps were sent to the Junta with instructions that his wishes be carried out.[58] The last invoice submitted by Cruz in July is pertinent here for it includes a charge for coloring and "binding of 7 volumes of maps."[59] These may well have been the 7 distributed to the Junta since this would have been the most convenient form for the members to handle so large a map.

Here the record ceases without indicating whether Aranda's instructions were ever actually carried out or what other use was made of the map by the Junta or in the negotiations with Portugal which were to result in the treaty of San Ildefonso, signed in October 1777. Nor has it been possible to identify any of the existing examples of the map as having been in one of these early distributions.

However, we do know that an example reached South America, for in his letter of instructions to Joseph Vertiz who succeeded him as Viceroy of Buenos Aires, Cevallos wrote "... in order to help you... in the execution of the demarcation line, I am leaving... a map made by D. Juan de la Cruz... containing South America."[60] Perhaps this was the one which Cevallos had received two years earlier as a member of the Junta. In any event we have here an example of inter-continental distribution of Cruz Cano's map.

When we review the record of distribution and the reaction to the map, it seems unnecessary to follow Carmichael, Jefferson and the others in assuming a major change in official attitude toward the map in the effort to account for its undoubted rarity in 18th century Madrid. Actually the government was engaged in correcting the map and, presumably, Cruz Cano's delineation of the boundary and related features had already been removed from most of the examples which were distributed. In view of these and other changes that we know of, it seems unlikely that the government would have undergone a fundamental and semi-

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[56] Iriarte to Grimaldi, November 14, 1775. Citations as in footnote # 36.

[57] Grimaldi to Cálvez, June 3, 1776. NA, RG 76: Simancas, Leg. 7412, Fol. 33. Copies of the book "Discourse on the Meridian of Demarcation" written by Jorge Juan and Antonio Ullao in 1749 were also distributed to members of the Junta.

[58] Grimaldi to Aranda, June 20, 1776. NA, RG 76; Simancas, Leg. 7412, Fol. 23. Grimaldi refers to the earlier letter from Aranda but the letter itself is not included in the available documents. Consequently, we do not know what information Aranda wished to have plotted on the map. A letter from Gálvez to Cevallos, June 21, and the reply, June 22 (Donoso, p. 130), reveal that Aranda's letter and the maps reached the Junta.

[59] Invoice from Cruz. Payment authorized July 4, 1776. NA, RG 76; Henares, 49: Donoso, 158.

[60] Cevallos to Vertiz, Buenos Aires, June 12, 1778. Donoso, p. 123.

public change of opinion. A more acceptable explanation is that, given the distribution which has been documented (no doubt there were other instances), the existence of the map would have become increasingly known to individuals outside the government. Since it was an official map, being used in delicate negotiations, and in view of the traditional secrecy in regard to cartographic information, the officials may have been embarrassed by this development. This would have been particularly the case if examples of the first edition *with* the boundary had got out, as indeed must have happened since at least two have survived. Consequently, Carmichael, Jefferson, Humboldt and even López himself may be victims, along with Cruz, of an official policy, or at least well-planted rumor, to "discredit the map as being barely exact" as suggested by López and of which Floridablanca's letter may well be an example.

REHABILITATION AND SALE TO THE PUBLIC

This policy, if indeed it was formalized, did not remain long in effect for the rehabilitation of Cruz and his map began in the 1790's after his death, and received official sanction in 1802. López himself contributed to this when, in the discourse already quoted, he said, "Finally I will conclude that, in spite of the defects which the map has, it is an example of the best that we have printed of this part of the world since seldom does a map include such a large area..."[61]

About this time another expert came to the support of Cruz with favorable testimony concerning his map. In 1796 Francisco Requena, a general of the army with long experience in boundary survey in Amazonia and elsewhere in South America, had received a royal commission to compile a map showing the status of the demarcation line. In 1796 he completed the map in manuscript and paid tribute to Cruz in two places in a lengthy note to the sources. A considerable section in the Central Amazon along the Madera and Ytennes was copied from Cruz's map and Requena also claimed to have used "the best, most modern, and most exact maps... especially the already mentioned one by Juan de la Cruz."[62] The maps are similar, but by no means identical. More important than the degree of coincidence is the generally high regard which Requena held for Cruz Cano's map. This view was stated even more forcefully a few years later when Requena was asked to make a more detailed evaluation.

By June 1802 the rehabilitation of Cruz and his map was largely accomplished. The map received a very favorable evaluation from Requena. Examples were distributed within the government, restrictions were removed and it was placed on sale to the public. These matters are covered in some detail in the final set of documents from the official archives, comprising 23 letters and reports during the first quarter of 1802.

This series of events was triggered by a simple request for two examples of the map: from Josef Caballero, Minister of War, to Pedro Cevallos, Minister of State.[63] Apparently Cevallos was not well informed for he asked the Director of the Royal Calcografia for a report on the map. The Director replied that, when the Calcografia had been established in 1789, the plates and printed examples had been deposited there by the Minister of State with "verbal orders that no copies of the map could be sold, because it seems that it was

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[61] Duro, *op. cit.*, p. 407.

[62] *Mapa Geográfico de la mayor parte de la América Meridional que contiene Los Paises por donde debe trazarse La Línea Divisoria que divida los Dominios de España y Portugal Construido en virtud de Real Órden por el Teniente General Dn. Francisco Requena en al año de 1796.*
The map has apparently not been published in Spain but a printed facsimile with the note "Printed by F. Bourquin, 31 So. Sixth St. Phila. Pa." is dated 187— in Phillips, *Maps of America*, p. 804. An example of this facsimile is in the Library of the University of Kansas, together with a reduced photocopy of the original manuscript.
A manuscript text to accompany the map was also written by Requena and V. Aguilar y Jurado, *Historia de la demarcación de limites en la América entre los dominios de España y Portugal...* and was ultimately published, in Biblioteca del Comercio del Plata, Vol. 3 (Montevideo, 1846).

[63] Caballero to Cevallos, January 15, 1802. NA, RG 76; Henares, 54-55: Donoso, 160-161: Duro, 410. This Pedro Cevallos (1764-1840), a Minister under Charles IV, should not be confused with the Viceroy of Buenos Aires, mentioned previously. Ristow, (*op. cit.* p. 9-10), has expressed the opinion that Faden's re-engraving of Cruz Cano's map may have led the Spanish government to "take a second look" at the map. This is certainly possible, but there is no mention of the Faden in the documents here reviewed.

not correct in the demarcation, with particular reference to the boundaries of the possessions with Portugal, and in fact, not a single copy had been given out or sold without orders from the Senior Superintendent..."[64] Later on an accurate count revealed 151 examples of the map, complete in 8 sheets – but with no indication of any difference in edition.[65]

This report, which corroborated the evidence already cited regarding the strict control of the map, led Cevallos to seek an expert opinion. He wrote to Francisco Requena, who was both a leading authority on the demarcation and, as we have seen, already familiar with the map: "Knowing of the knowledge you have in this matter (demarcation), the King wishes you to go to the Calcografia, examine the map, see what corrections are needed and report what you think about this."[66]

Requena's report was a substantial document of several pages,[67] which reviewed the deficiencies of the map, suggested some changes, and gave a very favorable general estimate of its excellence. He paid considerable attention to the Spanish-Portuguese boundaries and took the position that the true demarcation line was that of Tordesillas which appeared (on all editions) as a meridian intersecting the coast of Brazil at 1° and 25° south. "The map," wrote Requena, "cannot serve them (the Portuguese) in any way as a support... In fact it is an indication of, and an argument against, their immense usurpations." This he explained was because it showed Portuguese mines, towns, province-names, etc., in the area to the west of the Tordesillas line.

Despite this concern with the demarcation, Requena does not discuss a specific line which can be identified as Cruz's version of the demarcation. The conclusion therefore is that he examined a second (or later) edition from which the controversial dash-dot-dot-dot-dash boundary had already been deleted. Otherwise he surely would have mentioned it since he was an expert on the particular issue and had compiled (1796) a map specifically to show the demarcation.

Requena recommended that existing copies of the map be sold to those who needed it but that if it ever should be reprinted, there were several changes which should be made. One was that a dotted boundary which "surrounds the Portuguese establishments in the East" should be removed. Another was that representations of non-existent river connections should be removed, such as the linkage between the Yapura, Negro and Orinoco rivers. Finally he suggested that the representation of the continental interior "ought to be printed with a more delicate line in order to differentiate... that which is known from that which is doubtful." These recommendations by Requena assume importance because no trace of the suggested changes has been found on any example of the map. Therefore, this is a strong indication that there has been no alteration of the plates since 1802 which, indirectly, provides further support for our earlier dating of the observed changes. On the basis of the Director's report to Cevallos, there is every reason to believe that the plates had not been used, much less worked on during the years since 1789 when they had been deposited in the Calcografia.

The general evaluation by Requena was most favorable. He wrote, "This work does honor to the nation, to the wise minister who promoted it and to the author for the careful detail and minute attention with which he had fashioned the map... At the time when the map appeared it was impossible to make another one as exact... Since, even when the map of Cruz was not so generally known, all nations and various individuals in Spain had copies of it, now it ought to be given to whomever asks for it... and at the same time garnering reparation for the cost of its engraving."

As a result of this favorable evaluation and Requena's recommendation, Cevallos lifted the restrictions which had kept the map virtually locked in the Calcografia. He explained this change in policy in his answer to the Minister of War and sent him the two examples of the map as had been requested.[68] Other distributions were made. At Cevallos' order 20 examples were delivered to the Ministry of State, 9 more

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[64] J. F. Caballero, Director of the Calcografia, to Cevallos, January 24, 1802. NA, RG 76; Henares, 55-56: Donoso, 161-2: Duro, 410.

[65] J. F. Caballero to Cevallos, March 3, 1802. NA, RG 76; Henares, 71-72: Donoso, 170.

[66] Cevallos to Requena, January 27, 1802. NA, RG 76; Henares, 57: Donoso, 163.

[67] Requena to Cevallos, February 9, 1776. This important document is given in full in our three sources: NA, RG 76; Henares, 59-67: Donoso, 163-168: Duro, 410-413.

[68] Cevallos to Josef Caballero, March 10, 1802. NA, RG 76; Henares, 77-78: Donoso, 173-174.

were sent to other ministries and officials,[69] and the Calcografia put the map on sale. In a very real sense, the Cruz Cano map was unveiled. The Calcografia listed the map among the prints available to the public. Examples became more widely distributed and at least one reprinting was necessary later in the 19th century.

THE MAP IN THE 19TH CENTURY BOUNDARY NEGOTIATIONS

Boundary disputes between countries of South America during the latter part of the 19th century provide the main record of the use of Cruz Cano's map. These disputes had their origin in colonial times and the cartographic history of the areas in question was treated, sometimes at length, in the rather elaborate arguments prepared for the arbitration commissions which judged a number of these controversies. Sometimes sketch maps or facsimiles of the pertinent portion of the Cruz Cano map were included since the map was an important one for its period. This was the case in connection with the arbitrations between Brazil and French Guiana (1899), Brazil and British Guiana (1903), and between Peru and Bolivia (1906). In the dispute between Venezuela and British Guiana (1897-1898) the map assumes greater importance since the delineation of the dash-dot-dot-dot-dash boundary along the Esquivo River on sheet 1 was a point of some significance. This portion of the map was, therefore, reproduced in facsimile and received considerable discussion in sections on the cartographic history of the area.[70]

The map played a larger role in the boundary negotiations of Chile and Brazil with Argentina because its representations of political control as well as certain geographical features gave the contending parties a basis for argument. The Chilean government claimed a good deal of territory lying east of the Andes, especially in Patagonia. On Cruz Cano's map the boundary of colonial Chile runs southeast across what is now Argentina to reach the Atlantic at about 38° S. The placement of names, especially "Rno. de Chile" and "Chile Moderno" on sheets 5 and 7, also supported the Chilean contention (see Fig. 1). In the Chilean argument, these points were discussed and elaborated on the basis of place-name and other geographic representations. The official character and the use of the map by the Spanish was emphasized along with the favorable recognition which the map had received, and numerous documents were cited from among those in the set subsequently published by Donoso. The four southern sheets were reproduced in facsimile. Although the original which was copied is not identified, it must have been an 18th century printing since sheet No. 5 is third rather than 4th state.[71] It is therefore a different example from the 19th century reprint in the Medina collection of the National Library (see Table 3) which is probably the one reproduced in Medina's *Cartografia Hispano-Colonial de Chile*. The Argentine negotiators countered this argument by asserting that names were clearly misplaced and that Cruz Cano's map, while a good general representation of the geography was no real basis for boundary delimitations.[72] Chile's claim to much of Patagonia was not allowed, but we do not know the importance given to the argument based on Cruz Cano's map.

The same is the case with the dispute between Argentina and Brazil over the Misiones area which was arbitrated by President Cleveland in 1894. A major point involved the location and identification of two small rivers in the eastern side of the Parana's drainage, the San Antonio and the Pepiry. Both sides agreed, as had Spain and Portugal more than a century earlier, that the boundary should run north up the Pepiry,

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[69] In this group of documents are letters of transmittal and usually letters of acknowledgement covering distribution of the map to:

Governor of the Council of the Indies	1 example
Council of the Indies	2 examples
Manuel Godoy, Prince of Peace	2 examples
Secretary of the Treasury of the Indies	1 example
Ministry of Ecclesiastical Affairs	1 example
Ministry of the Navy	1 example
Ministry of Justice	1 example

[70] Venezuelan Boundary Commission, *Report and Accompanying Papers*... 4 Vols. (Washington, 1898), Vol. 3, pp. 378-81, 104-105; Vol. 4, plate 50.

[71] Chile, *Esposición que por parte de Chile i en respuesta a la Esposición Argentina*... 6 Vols., & portfolio (Santiago, 1896), Vol. 1, p. 116-130; facsimile of sheets 5-8 in portfolio.

[72] *Argentine-Chilian Boundary, Argentine Evidence, Report presented to the Tribunal*... (London, 1900), p. 557-558.

across the height of land and continue north, down the San Antonio. The Argentinians identified one set of streams to be the ones in question and adduced considerable evidence and argument in support of their position. The Brazilians maintained that the correct pair of rivers lay farther to the west than those championed by the Argentinians. This claim, which gave more territory to Brazil, was supported by the representation of the two rivers on sheet No. 6 of Cruz Cano's map (see fig. 4). Quite naturally, therefore, the map was given an important place in the Brazilian argument, with a facsimile of the pertinent portion, discussion of its relevance to the issue, favorable quotations from the authorities, and, as in the Chilean case, citations from the Spanish documents to demonstrate the official origin of the map.[73] Here, too, the Argentinian negotiators countered with the assertion that the map was in error, that it was not an official document and that Cruz was not a geographer but was known principally for his beautiful engravings of costumes. Here we also find repeated the old rumor that the Spanish Government "ordered the plates of the map to be mutilated and withdrew it from sale."[74] The award favored the Brazilian-Portuguese position over the Argentinian-Spanish, but here again we do not know how important the arguments based on Cruz Cano's map were to the Arbitrator.

The significant point, in the context of this inquiry, is that the map was used in this, as well as other negotiations, more than a century after its first printing. The question of which edition was being consulted by the negotiator also assumes importance, although none of them appeared to realize that there was more than one edition. For example, the Brazilians use the map mainly as an authority for the location of the two rivers and make no reference to Cruz's delineation of the Spanish-Portuguese boundary which, on the first state of sheet 6, ran right along the two rivers in question (see fig. 4). Since this would have strengthened their argument, they certainly would have mentioned it if they had seen the boundary, so it can be assumed that they were using a second or later edition from which the line had been deleted. This assumption is borne out by facts that the Brazilian facsimile does not show the boundary. Further, the original from which the facsimile was made was deposited with the Brazilian materials in the National Archives, Cartographic Records Branch and proves to be a third edition (Table 3, map 10).

The Argentinians also had an example of the map which had been obtained from the Minister of State in Madrid in 1882. Concerning it, Zeballos wrote that Cruz "gave out as limits in Misiones those erroneously surveyed in 1759."[75] If we accept this as a definite reference to a specific boundary line, then Zeballos must have been using a first edition—or at least a map of which sheet 6 was in first state. Unfortunately, this cannot be verified because there is no representation of this map in the Argentine Argument or Evidence, nor is one deposited with their materials in the National Archives. Perhaps the Argentinians had inherited from the Spanish a liking for secrecy in regard to this particular point. However, this is the only reference to what appears to be a first edition or state among the numerous citations and reproductions of Cruz Cano's map in these boundary negotiations. Those that can be classified are mostly 3rd or 4th state. A complete example of the map filed with materials on British Guianian boundaries at the Colonial Office Library in London even turns out to be a 19th century reprint (Table 3, map 36).

THE NINETEENTH CENTURY REPRINT

At several places in this paper there has been mention of a 19th century reprint. This brings us full-circle, for it was with the identification of such an impression that this inquiry began. When the Library of the University of Kansas first acquired an example of the map, a routine check of an obvious source[76] quickly led to a Quaritch catalog of 1891. Here the description of the map ends with the intriguing sentence, "From

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[73] *Statement submitted by the United States of Brazil to the President... as Arbitrator...* 6 Vols. (New York, 1894), Vol. 1, p. 172-192; Vol. 5, x-xi, plate 16; Vol. 6, plate 17-A.

[74] Estanislao Zeballos, *Argument for the Argentine Republic upon the Question with Brazil in Regard to the Territory of Misiones*, (Washington, 1894), p. 327. Zeballos gave a more lengthy and violent criticism of Cruz in his *Arbitration on Misiones...* (Buenos Aires, 1893), p. 19-33.

[75] *Ibid.* pp. 22, 26.

[76] Philip L. Phillips, *A List of Maps of America in the Library of Congress* (Washington, 1901), p. 801.

the paper we can see that some modern impressions were taken from the plate." Further search turned up an earlier listing of this impression in a Quaritch catalog of 1886, and from this it is clear that someone in the firm recognized that in fact the plates had *not* been destroyed.

Careful examination of the KU example revealed it to be on machine-made paper, therefore post-1810. There are no watermarks on the plate area, but along the side edge of each sheet a dandy-roll had pressed the repetitive mark CANSON & MONTGOLFIER—VIDALON—LES—ANNONAY. This identified the manufacturer of the paper as the famous and venerable French firm, still operating at the same location. Officials of the firm could not provide a definite dating for the use of this particular mark, but they reported that it must have been after 1861 when the firm's name was changed to the above form.[77] Although Quaritch does not mention the mark, the evidence indicates that his map was of this printing. On this basis we can date this 19th-century reprint sometime between 1861 (earliest possible date for the paper) and 1886 (first known offering in a dealer's catalog). Records at the Calcografia in Madrid do not provide more definite information.

Eight examples of this impression have been positively identified. All carry the Canson & Montgolfier mark except the one in the Library of Congress which has been trimmed close to the plate mark. Sheet dimensions of the other seven examples are very close to 28 x 42½ inches (71 x 108 cm.). This is substantially larger than the sheet size of the 18th century printings which, when untrimmed, vary narrowly around 26 x 36 inches (66 x 91 cm.), and this provides another means of at least tentative differentiation between an 18th and 19th century printing. As is indicated on Table 3 (maps 30-38) the 19th century reprints are identical in state and to the fourth edition of the 18th century printings. This provides additional evidence of the lack of alteration of the plates since the late 18th century.

Finally, we can carry the chronology forward nearly a century to the present time. In 1942 Guillén reported that the plates were preserved in perfect condition at the Calcografia in Madrid.[78] This is still the case, for in 1963 the University of Kansas Library arranged for a new impression, which as the final line in Table 3 indicates, is identical in state to those preceeding it. In Madrid during the summer of 1964, several examples of recent impressions were seen on the walls of government offices. Officials at the Calcografia said that impressions were run from time to time for various government agencies.

Today one can obtain, in the words of Quaritch 75 years ago, "a modern impression taken from the plate." This impression on fresh paper of good quality records the unblemished and unchanged states of the fourth and final edition of Cruz Cano's venerable map—an edition which can be dated with reasonable assurance as 1776 or 1777 and with near certainty as having been prior to 1789 when the stock of maps was deposited at the Calcografia.

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[77] Personal communication from the Director General, Canson et Montgolfier, January 27, 1961.

[78] Guillén, *op. cit.*, p. 12.

Table 1

ESTIMATED COST AND ACTUAL PAYMENTS OF RECORD
FOR THE MAP OF SOUTH AMERICA BY CRUZ CANO

(All figures in reales de vellon)

Cost Estimate By Cruz - 18 July 1768		Payments Authorized for Manuel de la Mena to Make from the Gazeta and Mercurio Fund to: Cruz Cano	Hipólito Ricarte
Grid & Borders (?) 8 sheets *(construcción en ocho hojas)*	6,000	3,000 (18 July '68)*	
		6,000 (9 July '73)*	
Engraving the geography on all 8 sheets	6,000	6,000 (30 August '75)*	
Decorations, coats of arms, inscriptions, etc.	3,000	6,000 (7 April '76)*	
			Sheet Numbers and Date
Engraving the lettering by Hipólito Ricarte. 32 Reales per 100 for 12,000 words *(palabras)*.	3,840		3,647 - 1 & 2 (5 Feb. '71)
			2,191 - 3 and corrections on # 1 (17 June '73)
			1,412 - 4 and corrections on # 3 (4 April '75)
			1,768 - 6 & 7 (8 July '75)
			3,222 - 5 & 8, corrections on various (8 Dec. '75)
			460 - corrections (25 Jan. '76)
Printing, 1000 copies (8,000 sheets @ 1½)	12,000		12,700 Lettering Subtotal
			169 - First Printing (8 Dec. '75)
Mounting & coloring examples for the King.	not included	1,995 (25 Jan. '76)	3,000 - Second Printing (24 Feb. '76)**
Binding in atlases?		1,480 (7 April '76)	
		724 (4 July '76)	
Totals	30,840	25,199	15,869
Approximate equivalent in £ Sterling***	342	279	176

Source: Various letters in NA, RG 76, Henares, p. 14-49; Donoso, 147-158. Figures etc. from itemized statements and bills. Dates are of the official authorization to Mena for payment to Ricarte or Cruz.

* Specific services were not given in connection with the four lump-sum payments to Cruz. But it is clear from the division of labor between Cruz and Ricarte that the payments were for services listed previously in the cost estimate.

** The number printed was not specified, but at the original rate of one-and-a-half reales per sheet, 3,000 reales would pay for the printing of 250 examples of an eight-sheet map.

*** The approximate equivalent in the 1770's is calculated from rates found in J. E. Kruse, *Jürgen Elert Krusens Allgemeiner und Besonders Hamburgischer Contorist*... (Hamburg, 1771), Part 1, pp. 241, 251.

Table 2

CHANGES ON PLATES AND SHEET STATES - CRUZ CANO'S MAP OF SOUTH AMERICA

Note: In the columns under the heading "Sheet-States", the letter "Y" (for "yes") indicates the item is present on the plate, while "N" (for "no") indicates its absence. A dash (—) means no subsequent change for the item in question. Locations of these various changes are plotted on the Index Map (Fig. 3). Longitude is east of the Peak of Tenerife, as on the original map. The categories of changes are indicated by letters and numbers as follows:

A-I changes directly and indirectly related to the deletion of the major boundary between Spanish and Portuguese possessions. Included are several deletions of the word Portuguese and insertions of references to the Spaniards. The letter "A" refers to the deletion of the -·-·- boundary on all six sheets.

1-18 additions of "non-political" place and area names, geographic features, etc.

w-z four changes on sheet No. 5 (fourth state) showing political changes relating to the establishment of the Viceroyalty of Buenos Aires in 1776.

	Sheet-States 1	2	3	4
Sheet No. 1 (two states)				
A. -·-·- boundary, southeast corner (the segment in northeast along the Esquivo River is present on all examples)	Y	N	—	—
1. "lo que no es posible" added as last line to long note on navigation of Rio Negro, bottom edge of sheet at 307°E	N	Y	—	—
Sheet No. 2 (three states)				
A. -·-·- boundary, southwest corner	Y	N	—	—
2. "MAR ATLANTICO DEL / NORTE"	N	N	Y	—

		Sheet-States			
Sheet No. 3 (three states)		1	2	3	4
A.	-·-·- boundary from northeast corner recurving across eastern half of sheet to southeast corner	Y	N	—	—
B.	"TERRITORIO DE MISIONES, Ó PAIS DE LAS AMAZONAS," eastern half, below 5°S	N	Y	—	—
C.	"por los Portugueses" on second line below town name "S. Miguel ocupado," south of R. Ytenes, 13°S 312°E	Y	N	—	—
3.	"Nuevo Marañón" printed below large river where it crosses 5°S at about 303°E	N	Y	—	—
4.	"donde se cree que hay Pblos intrusos" after and below the name "R. Piraure" a northbank tributary of R. Beni at 9°S 311°E	N	Y	—	—
5.	A line of unnamed hills trending SW-NE north of Camino para Villa-boa, 12°S 318°E	N	Y	—	—
6.	"Población nueva" to identify an open-circle town-symbol in the fork of rivers Paraguay and Jauru, 16°S 318½°E	N	Y	—	—
7.	"Zacata" and town symbol, just below the large print CHUCUYTO, 17°S 306°E	N	Y	—	—
D.	"Española por Baulen" added to designation "Estacada de S. Josef" on R. Ytenes just to the north of item "C" on this list	N	N	Y	—
E.	"Zanja abierta por D. Maties Baulen" and lake between Zanjon 1 and 2, 14°S 311°E	N	N	Y	—
8.	"Miss de Apolobamba" printed S-N west of R. Beni 13°S 307½°E	N	N	Y	—
9.	"Montes de Cacao" and hill symbols between the words PAMPAS and CAYUBABAS, 11°S 310°E	N	N	Y	—
10.	East and south of item No. 9, between rivers Mamore and Ytenes—a note "Alto Matucari con mucho ganado alzado" printed N-S along Mamore; "Montes de Cacao" printed S-N along Ytenes. A line of hills added along each river	N	N	Y	—
11.	A line of hills NW-SE parallel to R. Ytenes on the north and extending across 315°E with "Cordilleras" added at 13°S	N	N	Y	—
12.	"Montes" added below the hills shown south of the word MUSO, about 16°S 313°E	N	N	Y	—
Sheet No. 4 (two states)					
A.	-·-·- boundary, southwest corner	Y	N	—	—
13.	"BRAZOS DE LA BOCA DEL RIO DE LAS AMAZONAS," east of mainland at top edge of sheet	N	Y	—	—
Sheet No. 5 (four states)					
14.	Three-and-a-half lines of print, "Los que... Cordova y Mendoza." added to original three-line note, "Ys Picunches... Aucas.", 34°S 310°E	N	Y	—	—
15.	"MAR / PACIFICO / DEL SUR"	N	N	Y	—
16.	The western border of the province CUYO, a dotted line from an unnamed river at 29°S 308°E winding southward through the mountains to R. del Diamante 36°S 307°E	N	N	Y	—
A.	-·-·- boundary, northeast corner along south bank of R. Ypanè guazù, a west-flowing tributary of the Paraguay at 23½°S	Y	Y	N	—
w.	"Pcia DE MENDOZA" 34°S just above the note "Ys Picunches..."	N	N	N	Y
x.	"Pcia DE S. JUAN DE LA FRONTERA" 31°S and north of the city of the same name	N	N	N	Y
y.	A boundary between the provinces of Mendoza and S. Juan, shown by a dashed line running generally east-west and dividing the older province of Cuyo.	N	N	N	Y
z.	"Nvo VIRREYNto" inserted before the designation "Pcia O Gno DE BUENOS AYRES," 31°S 315°E	N	N	N	Y
Sheet No. 6 (three states)					
A.	-·-·- boundary from R. Tiete at north edge of sheet to Rio Grande de S. Pedro in the south, thence northwest and off the west edge of sheet along the R. Ypanè guazù at 23½°S	Y	N	—	—
F.	A note, "Division del antiguo Paraguay, segun los Autores mas clasicos" printed along the boundary at north edge of sheet	Y	N	—	—
G.	"de los Portugueses" additional designation for the town "Poblacion Nueva" on the east shore of Rio Grande de San Pedro, 32°S 325°E	Y	N	—	—
17.	The name of the west-flowing headwater section or tributary of the Rio Grande de San Pedro, Ryai, or	Y	Y	N	—
	Igay	N	N	Y	—
18.	"R. Guayba" printed above the east-flowing lower course of the Rio Grande de S. Pedro, just below the word "Monte," 29½°S 324°E	N	N	Y	—
Sheet No. 7 (two states)					
H.	Legend caption for -·-·- boundary symbol: "Termino de Misiones, entre el Peru, y Brasil,"	Y	N	—	—
	or "Termino de la Linea divisoria en el Brasil"	N	Y	—	—
I.	Additional legend composed six symbols relating to political possessions of European powers headed "Colores" bottom of sheet to right of scales	N	Y	—	—

Sheet No. 8 (one state)

No changes subsequent to the first printing of record. Traces of previous changes can be discerned on most examples, as follows:

In the title the word PENSIONADO has been erased from the plate and replaced by the present GEOGfo PENSdo. At the bottom right vertical borders have been erased and the "box" containing the "Advertencias..." enlarged to the right to accommodate the paragraph beginning "La Colonia del Sacramento..." A similar alteration is noticeable on the lower left of sheet No. 7.

Table 3

SHEET-STATES AND POSTULATED EDITIONS - CRUZ CANO's MAP OF SOUTH AMERICA

		Sheet Numbers								Editions for
	Location of maps	I	II	III	IV	V	VI	VII	VIII	Map as a Whole
1-2a	Harvard	1	1	1	1	1	1	1	1	I (2 examples)
3	Madrid, Servicio Histórico Militar	2	2	2	2	2	2	2	1	II (1 example)
4	Madrid, Museo Naval # 1	2	**1**	2	2	2	2	**1**	1	II - Variant
5	Madrid, Biblioteca de Palacio	2	2	2	2	2	2	**1**	1	,,
6	Providence, John Carter Brown	2	2	2	2	2*	2	**1**	1	,,
7-8b	London, Public Record Office	2	2	2	2	2A	2	2	1	,, (2 examples)
9-14c	New York, AGS, "Humboldt"	2	3	3	2	3	3	2	1	III (6 examples)
15	Madrid, Biblioteca Nacional	2	3	3	2	3	**1**	2	1	III - Variant
16	Lisbon, Biblioteca Nacional	2	**1**	3	2	3	3	2	1	,,
17	University of Kansas	2	3	3	**1**	3	3	2	1	,,
18	Boston Public Library	2	3	**2**	2	3	**2**	2	1	,,
19	(Faden's re-engraving 1799)	2	3	**2**	2	3	**2**	2	1	,,
20	Rio, Biblioteca Nacional # 1	2	**2**	**2**	2	3	3	2	1	,,
21	London, British Museum	2	**2**	3	2	3	3	2	1	,,
22	Rio, Foreign Office # 3088	2	3	**2**	2	3	3	2	1	,,
23-26d	Phila., Am. Phil. Soc.	2	3	3	2	4	3	2	1	IV (4 examples)
27	New York Public Library	**1**	3	3	2	4	3	2	1	IV - Variant
28	Washington, Library of Congress	**1**	3	**2**	2	4	3	2	1	,,
29	Madrid, Museo Naval # 2	2	**2**	3	2	4	3	2	1	,,
30-38e	19th Century Reprint	2	3	3	2	4	3	2	1	IV (9 examples)
39f	20th Century Reprints	2	3	3	2	4	3	2	1	IV (? examples)

A bold-face number for sheet-state in the array indicates a sheet-state different from that required for a specific edition. This produces a "variant edition."

* The John Carter Brown example differs from that in the Biblioteca de Palacio (map 5) in that MAR PACIFICO DEL SUR has been added in manuscript on sheet 5; see note "b" below.

a The Ayer Collection at the Newberry Library in Chicago has the only other complete first edition so far reported.

b Ocean names are *not* printed from the plate but have been added by hand. The same is true for an example at the Royal Library in Copenhagen which is identical in other respects. In both maps sheet 5 is otherwise in third state, but the lack of the engraved ocean name produces an intermediate state, 2A. The example at John Carter Brown (map 6), on which the ocean name has also been added by hand, lacks the other two changes on sheet 5 and so remains closer to second state. Other examples of manuscript addition of ocean names may exist among maps listed as state 3 for sheets 2 and 5.

c Other examples of the third edition are found in the National Archives in Washington, the Bibliothèque National in Paris, the Foreign Office Library (# 3087) in Rio de Janeiro, the Servicio Geográfico del Ejército in Madrid, and in the Bodel Nijenhuis Collection at the University of Leiden.

d Three other examples of the fourth edition have been reported. One is the Royal Geographical Society in Madrid and has been reproduced in Guillén, *Monumenta Chartográfica Indiana*. Two are in Rio de Janeiro at the Library of the Foreign Office (# 3086) and the National Library.

e Eight examples of the 19th century reprint on Canson-Montgolfier paper are located at the University of Kansas, Harvard, the Library of Congress (2 examples); in Madrid at the Museo Naval and the Biblioteca de Palacio; at the Colonial Office Library in London and the Foreign Office Library in Rio de Janeiro. Another example, assumed to be a 19th century reprint, has been reproduced in Medina, *Cartografia Hispano-Colonial de Chile*. The original, in the Medina Collection at the National Library in Santiago, is printed on paper with dimensions of 68 x 102 cm (letter from Professor Ricardo Donoso, November 1964). The paper size indicates a 19th century reprint (see p. 74), but the map has not been checked in detail.

f An impression printed in 1963 is in the library of The University of Kansas. The Spanish government continues to print a few samples from time to time. Modern reprints were seen by the author in several governmental offices in Madrid, including the Calcografia where the plates are kept and the printing is done.

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